

CONSTRUCTION MANAGEMENT AGREEMENT

CALMART SUB I, LLC

AND

TURNER CONSTRUCTION COMPANY

Dated: _____, 2018

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CONSTRUCTION MANAGEMENT AGREEMENT

Construction Management Agreement (“Agreement”) dated _____, 2018, between Calmart Sub I, LLC (the “Owner”), with an address at c/o Brookfield Properties, 250 Vesey Street, 15th Floor, New York, New York 10281-1023 and Turner Construction Company (the “Construction Manager”), with an address at 1900 South State College Blvd, Suite 200, Anaheim, California 92806.

W I T N E S S E T H:

WHEREAS, the Owner and/or its Affiliates own the properties described on Exhibit A attached hereto (the “Project Site”) with the address of 110 East 9th Street, Los Angeles, California;

WHEREAS, the Owner intends to undertake certain design, construction and renovation of the existing buildings for the Calmart Property Redevelopment project located between east Olympic Boulevard and East 9th Street between South Main Street and South Los Angeles Avenue, Los Angeles, California (the “Project”) more fully described in Exhibit B hereto

WHEREAS, the Owner desires to engage the Construction Manager to perform certain construction management services in connection with the work for the Project;

WHEREAS, the Construction Manager desires to be so engaged by the Owner to perform such services; and

WHEREAS, the Owner has entered into Trade Contracts, which shall be assigned to the Construction Manager upon the execution of this Agreement.

NOW, THEREFORE, in consideration of the promises and mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Owner and the Construction Manager hereby agree as follows:

ARTICLE 1 - DEFINITIONS

1.1 Defined Terms.

1.1.1 As used in this Agreement, any amendment hereto and all Exhibits attached hereto, the following terms shall mean the following:

“**AAA**” shall mean the American Arbitration Association.

“**Adjoining Premises**” shall mean any premises adjoining or in close proximity to the Project Site.

“**Affiliate**” or “**Affiliates**” shall mean, with respect to any person or entity, any other person, persons, entity or entities which controls, is controlled by or is under common control with such person or entity.

“**Allowance Items**” shall be the materials, equipment and other items so identified in the Budget.

“**Allowances**” shall be the dollar amounts allocable to an Allowance Item.

“Applicable Laws” shall mean all laws, codes, treaties, ordinances, rules, regulations, orders, decrees, interpretations, opinions, writs, injunctions and judgments of any national, federal, state, county, municipal, regional or other governmental or quasi-governmental body, instrumentality, agency, authority, court or arbitrator which are applicable to the Construction Manager’s performance of the Work, the Project, or the Project Site, as the same may be in effect from time to time.

“Applicable Provisions” shall mean those provisions of certain agreements and rules and regulations which relate to the Owner’s operation of the Project Site, the Project or the Work, which are or will be attached hereto as Exhibit H.

“Application for Payment” shall mean the Construction Manager’s monthly requisition for compensation which shall be submitted in accordance with this Agreement.

“Arbiter” shall mean an individual selected to act as a neutral party to arbitrate a dispute between the Owner and the Construction Manager pursuant to the Construction Industry Arbitration Rules of the AAA.

“Architect” shall mean the architect of record for the Project, or a successor designated in writing by the Owner.

“As-built Drawings” shall mean a complete set of the plans for the Work marked so as to accurately identify the actual, in-situ and post-construction conditions of the Work.

“Base Fee” shall be further described in Section 14.1.1.

“Books and Records” shall mean the Construction Manager’s accounts, records, books, contracts, purchase orders, receipts, invoices, vouchers, correspondence, memoranda, instructions, drawings, and other data relating to the Work.

“Budget” shall mean, prior to the establishment of the GMP, the sum of money (which may be updated or revised, from time to time, by the Owner or otherwise in accordance with this Agreement) allocated for the construction of the Project and established by the Owner with the input of the Construction Manager, the Owner’s Representative and the Design Professionals. After the GMP has been established in accordance with the terms of this Agreement, the Budget shall also mean and refer to the GMP.

“CADD Disks” shall mean disks that are reasonably acceptable to the Owner for files created for the computer-aided design/drafting system employed by the Owner, including 3D modeling software.

“Certificates” shall mean the certificates of occupancy and other approvals related to the Project, including for mechanical, electrical, plumbing, fire protection and life safety systems and equipment, which are required for the lawful occupancy of the Project, or the agreed, defined portion thereof, by the Owner or its Affiliates or their respective lessees.

“Certificate of Final Completion” shall be the certificate that the Design Professionals and/or the Owner’s Representative shall provide when the Construction Manager has met its obligations under Section 10.5.3.

“Certificate of Substantial Completion” shall be the certificate that the Design Professionals and/or the Owner’s Representative shall provide when the Construction Manager has met its obligations under Section 10.4 and the Owner has so concurred.

“Change” or **“Changes”** shall refer to the right of the Owner to, without nullifying any portion of the Contract Documents, make numerous changes in the Work, including expansion or addition of the scope of the Work, reduction or deletion of the scope of the Work and modification of the scope of the Work.

“Change Order” shall mean a written order, either prepared by the Construction Manager or the Owner and signed by the Construction Manager and the Owner, authorizing or directing a change in the Work or the method or manner of performance and/or an adjustment in the GMP, General Conditions Costs or Milestone Events.

“Change Order Proposal” shall mean a written proposal setting forth, in such detail as required by the Owner, any request by the Construction Manager for adjustments to the GMP or General Conditions Costs, or extension of any Milestone Event that is attributable to the Changes set forth in a Change Order Request, but only if and to the extent such adjustments or extensions are permitted by the terms of this Agreement.

“Change Order Request” shall refer to a written request by the Construction Manager for a Change which sets forth the nature of the Change.

“Claim” shall mean a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of terms, payment of money, extension of time or other relief with respect to the terms of this Agreement and also includes other disputes and matters in question between the Owner and the Construction Manager arising out of or relating to this Agreement.

“Composite As-built Drawings” shall mean red-lined Construction Documents showing the Work as constructed, and indicating actual locations of utilities and all changes and alterations made to the Work during construction, and incorporating those changes reflected in the As-built Drawings prepared by the Subcontractors in a single set of drawings.

“Confidential Information” shall mean any non-public information of any form obtained by the Construction Manager or the Construction Manager’s Representatives in the performance of the Work, including Proprietary Information.

“Construction Documents” shall mean the Drawings and Specifications.

“Construction Manager’s Final Affidavit and Release of Claims” shall mean the form, to be executed and submitted by the Construction Manager with the Application for Payment for the Final Payment, in the form attached hereto as Exhibit S.

“Construction Manager’s Representatives” shall mean the employees and personnel generally described in Section 2.2.1 and as listed on Exhibit C.

“Construction Manager’s Waiver and Release of Lien” shall mean the form, to be executed and submitted by the Construction Manager with each Application for Payment, in the form attached hereto as Exhibit R.

“Construction Phase” shall mean the phase commencing with the Work Commencement Date and ending on the date when the Construction Manager shall have achieved Final Completion of the Work.

“Contingency” shall mean the amount defined in Section 15.6.1(d).

“Contingency Costs” shall mean the amount that is available for use by the Construction Manager to cover certain unanticipated costs reasonably inferable from the Contract Documents subject to the Owner’s prior written approval, as more fully set forth in Section 15.11.1.

“Contract Documents” shall mean this Agreement, the Exhibits attached hereto, the Construction Documents, all Directed Change Orders, Change Orders, the Project Site Logistics Plan, and the Safety Plan.

“Cost of the Work” shall mean, collectively, the Direct Work Cost and General Conditions Costs, to the extent the same are necessarily and directly incurred by the Construction Manager in the proper performance of the Work.

“Day” or “day” shall mean a calendar day.

“Daily Report” shall mean the daily construction report that the Construction Manager’s superintendent shall submit to the Owner as required by Section 5.2.1.

“Design Defects” shall mean all errors, inconsistencies, omissions, conflicts or ambiguities in the Contract Documents.

“Design Professionals” shall mean individually and collectively, the Architect, engineers and/or other design professionals identified on Exhibit N attached hereto and their respective subconsultants, as same may be updated from time to time by the Owner.

“Direct Work” shall mean all trade work (which term shall be deemed to include, for all purposes under this Agreement, materials and equipment furnished by Subcontractors who are just suppliers), whether performed or furnished by Subcontractors or the Construction Manager.

“Direct Work Cost” shall have the meaning set forth in Section 14.3.1.

“Directed Change Order” shall refer to a Change Order The Owner may issue directing the Construction Manager to proceed with a Change in the Work.

“Drawings” shall mean the working drawings now or hereafter prepared by the Design Professionals for the Project, including those described on Exhibit O attached hereto (as the same may be amended, modified, revised or supplemented from time to time).

“Event of Default” shall have the meaning set forth in Section 19.1.1.

“Field Proceed Orders” shall refer to the orders that the Design Professionals and the Owner’s Representative shall each have authority to issue for minor changes in the Work.

“Final Completion” shall have the meaning set forth in Section 10.5.3.

“Final Payment” shall mean the last payment constituting the unpaid balance of the Cost of the Work (including retainage) and the Base Fee.

“General Conditions Costs” shall mean the actual incurred costs of performing the General Conditions Work until the Guaranteed Maximum Price is established when such costs shall be converted to a lump sum amount. The costs of the Construction Manager’s insurance, Subcontractor Default

Insurance (as defined in Section 11.5) and bonds (as applicable) shall not be included in the General Conditions Costs.

“General Conditions Work” shall mean the work that the Construction Manager shall perform including, inter alia, the furnishing of supervision, facilities, materials and general labor for items and requirements of the Work that do not lend themselves readily to inclusion in one of the separate Subcontracts and are not included in any Subcontracts and shall be expressly limited to those items listed on Exhibit K.

“Governmental Authority” or **“Governmental Authorities”** shall mean any national, federal, state, county, municipal, regional or other governmental or quasi-governmental body, instrumentality, agency, authority, court or arbitrator.

“Guaranteed Maximum Price” or **“GMP”** shall be further described in Article 15 and as fully set forth in Exhibit M.

“Guaranty Period” shall mean the date which is within one (1) year after the date which is the earlier of (a) the date of Substantial Completion of the Project, or (b) the date on which the Owner commences takes beneficial use of the Project Site or a portion thereof, including tenant move-in (including common areas), or within such longer period of time as may be prescribed by the terms of any of the Contract Documents.

“Hazardous Materials” shall mean: (1) any “hazardous waste” as defined by the Resource, Conservation and Recovery Act of 1976 (42 U.S.C. Section 6901, et seq.), as amended, and regulations promulgated thereunder; (2) any “hazardous, toxic or dangerous waste, substance or material” specifically defined as such in (or for the purposes of) the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. Section 9601, et seq.), as amended, and regulations promulgated thereunder; (3) any “hazardous waste” or “hazardous substance” as defined by applicable California State laws and regulations), as amended, and regulations promulgated thereunder; and (4) any hazardous, toxic, or dangerous waste, substance, or material as defined in any so-called “superfund” or “superlien” law or any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to or imposing liability or standards of conduct concerning such waste, substance or material (5) lead paint, or (6) mold.

“Indemnitees” shall mean the entities and individuals listed in Exhibit Q. The Design Professionals shall not be included as Indemnitees.

“Information Only Documents” shall mean all documents that are not Contract Documents and which are provided to the Construction Manager by or on behalf of the Owner, the Owner’s Representative or the Design Professionals, and which have been made available to the Construction Manager for information purposes only.

“Investigation” shall refer to the right of the Owner to conduct an investigation of all facts and background of issues relating to the Work that may give rise to a claim or potential claim.

“Key Personnel” shall refer to the Construction Manager’s Representatives identified as Key Personnel on Exhibit C, and any replacements thereof approved by the Owner in accordance with Section 2.2.2.

“LEED” shall refer to Leadership in Energy and Environmental Design as established by the United States Green Building Council.

“LEED Certification” shall refer to the official certification of LEED pursuant to the level of LEED specified by the Owner as set forth in Exhibit AA.

“Liquidated Damages” shall mean the sum per day applicable to each Milestone Event as identified in Exhibit DD, subject to the applicable grace periods set forth therein, if the Milestone Event shall not have been achieved by the applicable date set forth in Exhibit DD, subject to Section 10.8.

“Losses” shall mean losses, injuries, liability, damages, judgments, fines, penalties, costs and expenses, including reasonable attorneys’ fees and disbursements.

“Merchandise” shall mean materials, equipment, goods, merchandise or products purchased by the Construction Manager or Subcontractors.

“Milestone Event” shall mean any one of the critical events set forth in Exhibit DD.

“Monthly Report” shall mean the monthly construction report that the Construction Manager shall submit to the Owner as required by Section 5.4.1.

“Notices” shall mean notifications, requests, demands, consents, approvals and other communications to be delivered under this Agreement.

“Notice to Proceed” shall mean Notices provided to the Construction Manager by the Owner separately directing the Construction Manager to proceed with the Work associated each component of the Project as described in the Preamble of this Agreement.

“OCIP” shall mean an owner-controlled insurance program.

“Owner’s Representative” shall mean each of John Durschinger, Scott Kirkham, and Peter Davidson.

“Percentage of Completion” shall mean the lesser of (a) the percentage of that portion of the Work which has actually been constructed, installed or otherwise completed, as applicable, based upon the Schedule of Values, or (b) the percentage obtained by dividing (i) the expense that has actually been incurred by the Construction Manager on account of that portion of the Direct Work Cost for which the Construction Manager has made or intends to make actual payment prior to the next Application for Payment by (ii) the share of the Direct Work Cost allocated to such portion of the Work in the Schedule of Values.

“Permits” shall mean approvals, permits, authorizations, plans, licenses and certifications as required by any applicable Government Authority.

“Preliminary Guaranteed Maximum Price” or **“PGMP”** shall be further described in Article 15 and as fully set forth in Exhibit L. The PGMP shall function as the Budget until establishment of the GMP and the parties agree that the PGMP does not establish the limit of the GMP.

“Product Data” shall mean all illustrations, schedules, performance charts, diagrams, brochures, instructions, installation and maintenance recommendations, parts lists, and other information furnished by the Construction Manager or Subcontractors, as the case may be, to illustrate or describe materials, equipment or systems for some portion of the Work. Product Data shall include technical information published or prepared by the applicable equipment or materials manufacturer and shall include complete engineering and dimensional data.

“Project Communications Program” shall mean the program to be employed by the Construction Manager in order to facilitate communication among all parties working on the Project, including, without limitation, the Construction Manager, Owner, Subcontractors and Design Professionals, which program shall be prepared by the Construction Manager and approved by the Owner and attached hereto as Exhibit V.

“Project Documents” shall mean Drawings, Specifications, Subcontracts, Shop Drawings, Samples, Product Data, Change Orders, Directed Change Orders, Field Proceed Orders, purchase orders, Subcontractors’ As-built Drawings, Composite As-built Drawings, guarantees, warranties, documents, analyses, Books and Records and other financial documentation, operating manuals, maintenance instructions, test results, logs, write-ups, requests for proposals, proposals, information and other documents and materials created or generated in connection with the Project.

“Project Schedule” shall mean the time schedule in Microsoft Project format, prepared by the Construction Manager and approved by the Owner, detailing the sequence and time durations for the Work and the Milestone Events, including any approved revisions or updates thereto.

“Project Site” shall mean the site where the Project is located as generally described in Exhibit A attached hereto.

“Project Site Logistics Plan” shall mean the mobilization and logistics plan prepared by the Construction Manager and approved by the Owner and attached hereto as Exhibit F.

“Proprietary Information” shall mean all patent, copyright and trade secret rights, with respect to any work product of the Construction Manager developed or conceived by the Construction Manager in the course of performing the Work.

“Punch List” shall mean the list of the Work or corrective work remaining to be done and the time schedule for completing such work after a Certificate of Substantial Completion is issued.

“Recovery Action” shall mean an action in which the Construction Manager is obligated to defend each of the Indemnitees against any claim, demand, suit, action, proceeding, arbitration or other means or methods pursuant to which the recovery of Losses is sought against such Indemnitee.

“Required Subcontractor Retainage” shall mean ten percent (10%) of the amount of each progress payment under a Subcontract (calculated without reduction for retainage).

“Safety Plan” shall mean the site-specific safety plan, attached hereto as Exhibit G, created by the Construction Manager and approved by the Owner, setting forth the procedures and policies to be employed by the Construction Manager and the Subcontractors for initiating, maintaining and supervising all safety precautions and programs in connection with the Work, including safety of all persons and property during performance of the Work, to ensure that the Work is performed in the safest possible manner and in compliance with all Applicable Laws and Specifications.

“Samples” shall mean the physical samples which exemplify materials, finishes and workmanship and establish standards by which the Work will be judged.

“Schedule of Values” shall mean an itemized breakdown of each component of the applicable Direct Work Cost with the schedule for the balance of the Project segregated for each discrete portion of such balance.

“Separate Contractors” shall mean all contractors or subcontractors not engaged by the Construction Manager, and who are performing work at the Project Site or any Adjoining Premises.

“Services” shall mean construction management services required to be provided by the Construction Manager under this Agreement.

“Shop Drawings” shall mean the drawings, diagrams, schedules and other data specifically prepared by the Construction Manager or Subcontractors, as the case may be, to illustrate or define portions of the Work, which, as appropriate, shall reflect and incorporate the information in the Construction Documents depicting or otherwise pertaining to such portions of the Work.

“Specifications” shall mean the specifications now or hereafter prepared by the Design Professionals for the Project, including those described on Exhibit P attached hereto, as the same may be amended, modified, revised or supplemented from time to time.

“Staffing Plan” shall mean the staffing plan attached as Exhibit C, prepared by the Construction Manager and approved by the Owner, which lists the type and number of personnel required to be included as the Construction Manager’s Representatives, including the respective portion of their working hours that will be dedicated to the Project.

“Subcontract Assignee” shall be further described in Section 8.2.7.

“Subcontract Schedules” shall mean the schedule for the work performed by a Subcontractor.

“Subcontractor” shall mean a party contracted by the Construction Manager to perform a portion of the Work or to supply materials and equipment.

“Subcontractor’s Final Affidavit and Release of Claims” shall mean the affidavit submitted by a Subcontractor in the form of Exhibit U.

“Subcontractor’s Waiver of Release of Lien” shall mean the waiver and release submitted by a Subcontractor in the form of Exhibit T.

“Subcontracts” shall mean any subcontract between the Construction Manager and a Subcontractor and any sub-subcontract between a Subcontractor or sub-subcontractor and a sub-subcontractor at any tier.

“Subcontractor Default Insurance” or **“SDI”** shall be further described in Section 11.5.

“Submittals” shall mean Shop Drawings, Product Data, Samples and similar submittals.

“Substantial Completion” shall mean that stage in the progress of the Work when all of the requirements of Section 10.4.1 hereof have been satisfied by the Construction Manager.

“Substantial Completion Date” shall mean the date that is set forth for Substantial Completion as stated in the Project Schedule.

“Tenant Lease” shall mean the lease between the Owner and any tenant occupying space on the Project Site.

“Tenant Turnover Requirements” shall mean all the requirements set forth in Exhibit CC.

“**Threshold Amount**” shall mean the sum of Three Million Dollars (\$3,000,000).

“**Total Allowance Amount**” shall be the total of all Allowance Amounts.

“**Unavoidable Delay Events**” shall mean any one of the events listed in Section 10.7.1(a) – (i) which causes an Unavoidable Delay.

“**Unavoidable Delays**” shall mean delay in the performance of any portion of the Work resulting in the Construction Manager not being able to achieve any Milestone Event which is caused by an Unavoidable Delay Event.

“**Weekly Report**” shall mean the weekly construction report that the Construction Manager shall submit to the Owner as required by Section 5.3.1.

“**Work**” shall mean all work and other Services required to be performed by the Construction Manager under and subject to the Contract Documents, and includes all labor, materials, equipment and services to be provided by the Construction Manager under the terms of this Agreement to complete the Project.

“**Work Commencement Date**” shall mean the date the Construction Manager is required to commence the Work, as directed by the Owner pursuant to a Notice to Proceed.

“**Work Day**” shall mean any day that the Construction Manager has access to and is able to perform Work at the Project Site.

ARTICLE 2 - GENERAL PROVISIONS

2.1 Construction Manager

2.1.1 The Construction Manager hereby represents that (a) it has all the necessary power and authority to enter into this Agreement and that it is under no obligation or restriction that would in any way interfere or be inconsistent with, or create a conflict of interest concerning, its performance of the Services, and (b) without reducing its contractual obligations under this Agreement, the Construction Manager will perform all Services consistent with the standard of care applicable to a national construction manager experienced in the administration and construction of projects similar in scope and nature to the Project, and in buildings similar in nature, size, age and location to the Project Site (“**Standard of Care**”). The Construction Manager accepts the relationship of trust and confidence established between it and the Owner by this Agreement. The Construction Manager shall employ (x) its efforts, skill and judgment in the performance of the Services in accordance with the Standard of Care, and (y) efficient business administration, coordination and management, and its best efforts, skill and judgment in accordance with its Standard of Care, to cause the Subcontractors to perform the Work in an expeditious and economical manner, consistent in each case with (i) the intent of the Contract Documents and Applicable Laws and Specifications, and (ii) in accordance with the construction industry standards and practices followed by construction management firms providing construction management services for projects of similar scope and intended use in the Los Angeles metropolitan area and (iii) the best interests of the Owner relating to cost, quality and schedule in accordance with the Construction Documents and Budget.

2.1.2 Except as authorized by the Construction Documents, the Construction Manager shall not perform the Work with its own forces, or perform or subcontract for any act which would constitute the rendering of professional services in the practice of architecture, engineering or laboratory testing.

2.1.3 The Construction Manager shall cooperate and coordinate with, and perform the Services in conjunction and harmony with, the Owner or Separate Contractors, in such a manner as may be necessary or, in the judgment of the Owner, desirable to facilitate the prosecution of the Work and completion of the Project expeditiously and economically, consistent with projects of similar scope and intended use in Los Angeles and the best interests of the Owner, subject to the terms and conditions of this Agreement. The Construction Manager acknowledges that the Owner, directly and through the Design Professionals and the Separate Contractors, is and shall be actively involved in the development of the Project, and in interaction with the Construction Manager. The Construction Manager understands and agrees that no such involvement or interaction shall be construed to relieve the Construction Manager from the performance of, or to waive or modify in any respect, any of the Services.

2.2 Personnel

2.2.1 The Construction Manager shall hire and retain as the Construction Manager's Representatives a sufficient number of employees and other personnel, with the requisite skill, training and experience to enable the Construction Manager to perform the Services in the most expeditious and economical manner, in conformity with the Contract Documents and consistent with the quality and nature of the Project and the interests of the Owner. At a minimum, the Construction Manager's Representatives shall include the type and number of personnel identified on the Staffing Plan. None of the Construction Manager's Representatives shall be considered to be an employee of the Owner for any purpose or entitled to exercise any rights, or seek any benefit, accruing to the employees of the Owner by virtue of the work or services rendered by the Construction Manager's Representatives in connection with the Project.

2.2.2 Certain of the Construction Manager's Representatives who will be performing the Services are identified as Key Personnel. Key Personnel shall devote the respective portion of their normal working hours set forth in Exhibit C to the performance of the Services. Key Personnel shall not be replaced without the prior written consent of the Owner, provided, however, that if any Key Personnel shall leave the Construction Manager's employ, or otherwise become incapacitated, the Construction Manager shall designate a replacement Key Personnel having at least the same qualifications, skill and level of experience as the former or incapacitated Key Personnel, and who shall otherwise be satisfactory to the Owner. At the direction of the Owner, any Key Personnel to whom the Owner has a reasonable objection shall be replaced by the Construction Manager within five (5) days after such direction is issued. The Owner shall have the right to interview and approve in advance any proposed replacement Key Personnel. The hourly rate charged by the Construction Manager with respect to any replacement Key Personnel shall be at a level commensurate with the qualifications, skill and level of experience of such Key Personnel, but in no event, shall such rate exceed the rate charged by the Construction Manager with respect to the replaced Key Personnel without the Owner's prior written consent, which shall not be unreasonably withheld.

2.2.3 The Construction Manager shall provide security for the Project Site in accordance with a security plan prepared by the Construction Manager and approved by the Owner and described on Exhibit D. The Owner will pay directly the staffing costs associated with the security plan, but the security plan will be coordinated by the Construction Manager and any devices or equipment required by the security plan shall be included in the General Conditions Costs.

2.3 Design Professionals

2.3.1 The Design Professionals (and in some instances as set forth in this Agreement, only the Architect) may, among other things, inspect, observe and monitor, on behalf of the Owner, the

Work and certain other elements of the Project, provide to the Construction Manager and the Subcontractors interpretations or clarifications of the Drawings or Specifications, certify Applications for Payments and certify Substantial Completion and Final Completion. It is understood, however, that no such inspection, observation, monitoring, interpretation, clarification or certification, nor the provision of any other services by the Design Professionals for the Project, shall be construed to waive, modify or otherwise affect any of the Construction Manager's obligations under this Agreement.

2.3.2 The Construction Manager's communications by and with the Design Professionals shall be conducted through the Owner's Representative, and shall be recorded utilizing internet/web-based construction management software to be provided and maintained by the Construction Manager and approved by the Owner, with copies of written communications to be delivered by the Construction Manager to the Owner.

2.4 Owner's Representative

2.4.1 The Owner's Representative is hereby authorized to act on behalf of the Owner for all purposes under this Agreement unless the Owner otherwise notifies the Construction Manager in writing. The Owner shall notify the Construction Manager of any replacement Owner's Representative whom the Owner may select. The Construction Manager shall observe and comply with all instructions, requests, requirements, demands or other directives issued or made by the Owner's Representative on behalf of the Owner. Only the Owner's Representative is authorized to bind the Owner regarding any matters pertaining to this Agreement, except if and to the extent the Owner otherwise notifies the Construction Manager, or as may otherwise be provided in Section 2.3 hereof. The foregoing authorization and direction shall not relieve the Construction Manager from its responsibility to the Owner or any of its obligations or liability under this Agreement, if it believes that any such instructions, requests, requirements, demands or other directives issued or made by the Owner's Representative are incorrect or improper, in which event the Construction Manager shall immediately report such belief to the Owner and the Owner's Representative.

2.4.2 Unless otherwise notified by the Owner, and notwithstanding any other provision of this Agreement to the contrary, the Construction Manager is hereby authorized and instructed to deal directly with the Owner's Representative in connection with the Project

2.5 LEED Certification

The Construction Manager acknowledges that the Owner intends for the Project to obtain U.S. Green Building Council LEED Certification pursuant to the requirements set forth in Exhibit AA. It shall be the responsibility of the Construction Manager to assist the Owner, Design Professionals, Separate Contractors and LEED consultants to achieve such certification by creating (if necessary) and furnishing all cost evaluation, program implementation and any other documentation or information needed or requested by the Owner, Design Professionals, Separate Contractors or LEED consultants in order to achieve LEED Certification as per the Owner's requirements, or to comply with the terms and conditions for green building outline of responsibilities or indoor air quality requirements. The Construction Manager acknowledges that representations by the Construction Manager regarding its knowledge of and experience with LEED Certification constitute a material inducement to the Owner in deciding to engage the Construction Manager in connection with the Project. The Construction Manager is not responsible for the failure of the Project to become LEED Certified to the extent such failure is not the result of the Construction Manager's failure to perform its obligations under the Contract Documents.

ARTICLE 3 - CONTRACT DOCUMENTS

3.1 Contract Documents

3.1.1 The intent of the Contract Documents is to include all items necessary for the proper execution of the Work. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Construction Manager and the Subcontractors shall be required if and to the extent consistent with the Contract Documents and inferable to complete the Work in accordance with the Contract Documents. Subject to the terms and conditions of this Agreement, including the Standard of Care, the Construction Manager represents to the Owner that Construction Manager has reviewed and is satisfied with the condition of the Contract Documents, based on the current level of the completeness of the Contract Documents.

3.1.2 In the event of any conflict or discrepancy between or among different versions of the same Contract Document, the most recently issued version takes precedence over previous versions. In the event of any conflict or discrepancy between provisions in separate Contract Documents, the more stringent provision shall govern; provided, however, figured dimensions shall prevail over scale dimensions and large-scale Drawings shall prevail over small scale Drawings. If the conflict or discrepancy between or among separate Contract Documents pertains to (i) quantity, then the Contract Document requiring the greater quantity shall be deemed to be more stringent, (ii) quality, then the Contract Document requiring the better quality shall be deemed to be more stringent, or (iii) cost, then the Contract Document requiring the greater cost shall be deemed to be more stringent. Notwithstanding the foregoing, upon establishment of the GMP, any assumptions and qualifications agreed to by the Owner and the Construction Manager and contained in such GMP shall govern only with respect to the scope of the Work, specifically, as to the quantity and/or quality of the Work to be performed, or to the interpretation of the Construction Documents, and not with respect to any legal terms or conditions.

3.2 Information Only Documents

3.2.1 The Information Only Documents are not part of the Contract Documents, shall be used by the Construction Manager at its own risk, and are provided to the Construction Manager without any representation or warranty by the Owner, the Owner's Representative, any Separate Contractor or the Design Professionals as to the accuracy or completeness of the Information Only Documents or any other matter.

3.3 Responsibility to Detect and Avoid Errors

3.3.1 In the capacity as a the Construction Manager operating under the standard of care applicable to this Agreement, and not as a design professional, the Construction Manager shall fully study, compare and coordinate this Agreement, the Drawings and Specifications, the other Contract Documents, the Project Schedule, bid packages and associated scopes of Work, and all instructions, approvals, disapprovals and other communications received from the Owner and the Design Professionals, as they relate or pertain to the Work, provided, however, that the Construction Manager shall not be responsible for the failure of the Drawings and Specifications to comply with Applicable Laws. It is recognized that the Construction Manager's review is made in the Construction Manager's capacity as a construction manager and not as a licensed design professional, unless otherwise specifically provided in this Agreement. The Construction Manager shall immediately (or as promptly as possible if not able to do so immediately) report in writing to the Owner any error, omission, inconsistency, construction impracticality or other defect that was known from such review. The Construction Manager shall cooperate fully and in good faith with the Owner and the Design

Professionals to resolve any error, omission, inconsistency, construction impracticality or other defect that may appear in the Contract Documents in a manner that will not result in an increase in the GMP or a delay in the progress of the Work. However, the Construction Manager's duty to cooperate should not be understood to require that any resolution of any error, omission, inconsistency or other defect shall be at the Construction Manager's cost or expense, unless caused by the Construction Manager and the Owner may issue Change Orders where appropriate to resolve defects in the Construction Documents.

ARTICLE 4 - CONSTRUCTION MANAGEMENT SERVICES

4.1 Scope of Services and Representations

4.1.1 The Construction Manager shall administer, manage, supervise, direct, coordinate and cause the proper and efficient performance and furnishing, through Subcontractors or its own forces, of all work, labor, materials, equipment, tools and General Conditions Work required for the complete construction and/or installation of the Project.

4.1.2 Without limiting any other provision of this Agreement, the Construction Manager shall perform any and all other services that are customarily performed by construction managers for projects similar in scope and nature to the Project.

4.1.3 The Construction Manager shall perform all of the Services in accordance with the terms and conditions of this Agreement.

4.1.4 The Owner retains the right, in its sole and absolute discretion, to delete any portion of the Work from the scope of this Agreement, and a deductive Change Order shall be issued to reflect such deletion, and the Construction Manager shall be entitled to reimbursement for Direct Work Costs and General Conditions Costs incurred in connection with such portion of the Work prior to such deletion. The Owner may thereafter separately contract for such portion of the Work outside the scope of this Agreement.

4.1.5 The Construction Manager represents and warrants to the Owner that:

a. Construction Manager possesses the skill and competency, as well as the financial ability, to complete the Project in accordance with the Contract Documents, the Milestone Events and the GMP;

b. Construction Manager has visited the Project Site and is thoroughly familiar with and is satisfied as to the general, local and physical conditions that may affect cost, progress, performance or furnishing of the Work provided any additional testing or examination shall be reimbursable as a Cost of the Work; and

c. By submitting its GMP proposal, that the Contract Documents are sufficient to have enabled Construction Manager to determine the Cost of the Work and prepare the GMP, and that the Plans and Specifications and all addenda are sufficient to enable the Construction Manager to determine the Cost of the Work and GMP in accordance with all Applicable Laws, and otherwise to fulfill all of its obligations under the Contract Documents.

4.2 Procurement Analysis, Pre-Purchasing

4.2.1 The Construction Manager shall provide a procurement plan, including a purchasing schedule, to be reviewed and approved by the Owner, and as set forth in Exhibit E, as well as make recommendations to the Owner for alternative or substitute materials and equipment and their respective costs and scheduling impact.

4.2.2 Consistent with the Owner's goal of maintaining the Project Schedule, the Construction Manager shall identify, and make recommendations to the Owner regarding, the advisability of pre-purchasing long-lead time materials, equipment and supplies required in connection with the Work, and advise the Owner with respect to potential delays in their purchase, fabrication or delivery.

4.2.3 The Construction Manager shall arrange for expediting on and off-site storage of pre-purchased long-lead items, if approved in advance in writing by the Owner (including, without limitation, such arrangements as the Owner shall deem necessary or desirable for (i) access to such materials, equipment or supplies for the purpose of inspection and removal of the same, (ii) protecting the Owner's title to such materials, equipment or supplies, free and clear of all liens, encumbrances and rights of others, and (iii) insuring and protecting the same), and shall not permit any payment for materials, equipment or supplies stored off-site, unless such payment has been approved in advance in writing by the Owner and otherwise is authorized under the provisions of this Agreement.

4.3 Value Engineering, Cost Control and Life Cycle Analyses

4.3.1 The Construction Manager shall provide reasonable recommendations to the Owner for value engineering services so that the Owner's objectives of achieving the lowest cost, consistent with the standards established by the Owner for the Project.

4.3.2 The Construction Manager shall assist the Owner, the Owner's Representative and the Design Professionals in the performance of an evaluation of proposed building components and systems relating to initial capital costs, life cycle costs, operating and maintenance costs, energy conservation factors and systems maintenance and longevity, as applicable. The Construction Manager shall assist the Owner in applying for and obtaining rebates from energy providers. If certain value engineering services require signoff or approval of a Design Professional, the Construction Manager shall so notify the Owner, and the Construction Manager's value engineering recommendations shall be referred to the Design Professionals for review and approval.

4.4 Bidding of Trade Contracts

4.4.1 Without limiting the requirements of Section 8.2, the Construction Manager shall be responsible for the breaking out and distribution of bid packages to trade contractors approved by the Owner. The Construction Manager shall be responsible for subdividing such bid package documents for bidding; for the preparation and assembly of all documents; for incorporating all information necessary to produce complete bid packages and for recommending pre-qualification criteria for bidders to the Owner and for ensuring (with the cooperation and input of the Owner) that a sufficient number of qualified trade contractors are included in all bid lists. The Construction Manager shall prepare bid analyses and make recommendations to the Owner for the awarding of contracts and/or the rejection of any bids.

4.4.2 In addition to any other requirements of this Section 4.4, the Construction Manager shall also comply with the requirements of Exhibit BB.

4.5 Existing Conditions and Adjoining Premises

4.5.1 To the extent necessary to complete the Work, the Construction Manager has been provided and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and underground facilities, both natural and man-made and all surface and subsurface water conditions of the Project Site and surrounding areas) at or contiguous to the Project Site or otherwise which may reasonably be anticipated to affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by the Construction Manager and safety precautions and programs incidental thereto. By submitting its GMP Proposal the Construction Manager is reasonably satisfied that no additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work within the Project Schedule and in accordance with the other terms and conditions of the Contract Documents.

4.5.2 Prior to commencing the Work, the Construction Manager shall, from time to time, at appropriate intervals, (a) carefully investigate, study and compare all then existing conditions at the Project Site with the Drawings, Specifications and other Contract Documents; (b) verify all figures on the Drawings before laying out the Work; (c) take field measurements and verify field conditions and carefully compare such field measurements and field conditions and other information known to the Construction Manager with the Contract Documents before commencing activities; (d) review the Contract Documents and, if applicable, give prompt notice to the Design Professionals and the Owner of all Design Defects and obtain from the Owner specific instructions in writing with respect thereto before proceeding with the Work, and (e) cause to have prepared a pre-construction survey, including photographs and documentation, of the Project Site and all Adjoining Premises for review and approval of Owner. In the event that the Construction Manager is unable to obtain access to any area of the Project Site necessary to satisfy its obligations under this Section 4.5, it shall be relieved of such obligations to the extent of such area not made available to the Construction Manager, provided that the Construction Manager provides the Owner with ten (10) days written notice of such inability to obtain access and the Owner is unable to facilitate access by the Construction Manager.

4.5.3 The Owner shall furnish surveys, reports, drawings and other information in its possession regarding the existing conditions at the Project Site to the Construction Manager. The Construction Manager may reasonably rely upon such surveys, reports, drawings and other information.

4.5.4 The Construction Manager shall require the Subcontractors to take field measurements and verify field conditions and to carefully compare such field measurements and conditions and other information with the Contract Documents before commencing any Work.

4.5.5 Any additional cost from changes in the Work incurred due to a discrepancy in the existing condition not capable of being discovered after the Construction Manager's complete compliance with the investigations, studies and verifications required in Sections 4.5.1 through 4.5.4, shall constitute a Change.

4.5.6 The Construction Manager shall examine all Adjoining Premises and ascertain, before beginning the Work, the existing condition of the Adjoining Premises, and shall be governed thereby for the necessary, thorough, safe and satisfactory performance of the Work, whether or not such matters were indicated or specified on the Contract Documents. The Construction Manager shall perform all work in such a manner and take such protective measures as are necessary to keep and leave the Adjoining Premises in the same condition as they were before the commencement of the Work.

4.5.7 Whenever any parts of the Adjoining Premises interfere with or are interfered with by the Work, the Construction Manager shall make whatever changes to the Work are made necessary by such interference, whether or not such interference is shown on the Contract Documents. If such interference was not discovered and was not capable of being discovered by the Construction Manager upon the examination described in this Section 4.5, then the additional cost, if any, incurred by the Construction Manager by reason of such changes to the Work shall constitute a Change. If such interference was reasonably capable of being discovered by the Construction Manager before such examination, then such additional cost, if any, shall not constitute a Change, provided, however, that the Construction Manager shall be entitled to use Contingency in connection therewith.

4.5.8 Upon notice to the Construction Manager from the Owner of damage to any Adjoining Premises, the Construction Manager shall diligently repair and restore any damage to any Adjoining Premises arising out of the Work. If the Construction Manager does not promptly and diligently perform (subject to Unavoidable Delays) such repair and restoration and such failure shall continue for thirty (30) days after notice thereof, the Owner shall be permitted to perform or cause such repair or restoration to be performed at the sole cost and expense of the Construction Manager. All damage that is caused by the Construction Manager or Subcontractor shall be repaired at the sole cost and expense of the Construction Manager. At the Owner's request, the Construction Manager shall repair damage caused by the Owner's consultant, which shall constitute a Change.

4.5.9 In the event that any damage to any Adjoining Premises results in an imminent hazard to persons or property and the Construction Manager does not immediately repair and restore such Adjoining Premises, the Owner shall, without any prior notice to the Construction Manager, be permitted to immediately perform or cause such repair or restoration to be performed at the sole cost and expense of the Construction Manager.

4.6 Project Site Logistics Plan

4.6.1 Based on, without limitation, information supplied by the Owner, the Construction Manager shall prepare and submit for the Owner's approval a Project Site Logistics Plan that designates the field office for the Construction Manager's and the Owner's field representatives, storage areas, shanties, protection (netting, cables, etc.), cranes, fences and sidewalk bridges, temporary loading docks, if any, temporary lighting, temporary protection, temporary circulation and routes, and procedures for material delivery, location of equipment and certain other information, as attached hereto as Exhibit F. Such plan shall show how and when any Work at the Project Site will displace the Owner's personnel or services (e.g., service interruptions, circulation pattern, etc.). The Construction Manager shall identify and advise the Owner with respect to all required permits and special consultants that may be needed for implementing the Project Site Logistics Plan. The Construction Manager shall also assist the Owner in obtaining permission or any necessary rights or easements for gaining access to adjacent properties for implementing the Project Site Logistics Plan, if necessary.

4.6.2 The Construction Manager shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying the Owner, and owners and users of Adjoining Premises. The Construction Manager shall at all times conduct the Work to ensure the protection of persons and property, to minimize interference with the daily operation of occupied portions of the Project Site or adjacent buildings and businesses, and to minimize inconvenience to the general public and the Owner and its Affiliates and their respective guests, visitors and invitees to the Project Site.

4.6.3 The Construction Manager shall provide proper and safe access to and egress from any occupied areas of the Project Site at all times. In addition, the delivery, unloading, staging and storage of material and equipment shall be only in areas approved by the Owner. Such areas will accommodate only limited amounts of material and equipment. The Construction Manager shall be responsible for coordinating the arrival of material and equipment for the Work in order to prevent any accumulation outside designated areas. The Construction Manager shall coordinate and cooperate with the appropriate Separate Contractors in connection with such delivery, unloading, staging and storage of material and equipment. The movement of material, equipment and personnel shall be restricted to those areas and routes within the Project Site as may be designated or approved by the Owner. Any damage caused by such movement shall be repaired by the Construction Manager to the satisfaction of, and at no cost to the Owner, except where not caused by the Construction Manager or a Subcontractor, in which case, repairs shall be at no cost to the Construction Manager. The Construction Manager shall schedule, coordinate with and receive prior approval from the Owner for the use of any service or freight elevator in any area which is occupied or for which the Owner has accepted access and shall coordinate with any other contractors working within the Project Site. The Construction Manager shall respect the rights and privileges of the Owner, the janitorial and service personnel of the Owner and other contractors, vendors or suppliers working in the Project Site. In no event shall passenger elevators be used to move materials, equipment, tools or trash without prior written approval by the Owner.

4.6.4 The Construction Manager shall prepare a phasing schedule for the Work and shall work with the Design Professionals, the Owner and the Owner's Representative to develop a strategy that minimizes interference with the Owner's operations and services; and minimizes the number of relocations and the number of phases. The phasing and relocation plan shall minimize the associated costs and shall fully take into account the Owner's desire to cause the Project Site to remain open and fully functional to the fullest extent possible during the Construction Phase of the Project. The Construction Manager understands and agrees that the hours during which the Work may be performed may be restricted and variable, based upon the requirements of Governmental Authorities, the nature of the Work and the work of Separate Contractors, and the Construction Manager agrees to coordinate with the Owner, such Governmental Authorities and Separate Contractors, to ensure that the Construction Manager complies with all such requirements and time constraints.

4.6.5 Once the Owner takes over responsibility for the security of the Project Site, the Construction Manager shall require its employees to comply with the Owner's security rules and regulations. Insofar as practicable, the Construction Manager shall require all such employees to use access points designated by the Owner to enter and exit the Project Site. The Construction Manager shall require all guests, visitors and invitees to the Project Site to wear any safety equipment that may be necessary to ensure the safety of such guests, visitors and invitees.

4.6.6 The Construction Manager shall cooperate with, and coordinate the Work with the work of, Separate Contractors in order to facilitate the timely, efficient and safe completion of the Work, which coordination shall afford both the Construction Manager and the Separate Contractors reasonable opportunity for the installation, execution and storage of their respective work and materials. Without limiting the generality of the foregoing, the Construction Manager shall:

a. where applicable, connect properly the Work with the work of Separate Contractors;

b. to the extent necessary or as requested by the Owner, the Construction Manager shall review some or all of the plans and specifications for the work to be performed (or already performed) by Separate Contractors to ensure that the interface between the Work and the work of the

Separate Contractors is well and properly defined and that provisions contained therein fulfill the requirements for a coordinated and cooperative performance of work at the Project Site by all parties without any gap or overlap in such performance;

c. to the extent necessary or as requested by the Owner, schedule, organize and conduct meetings at the Project Site or such other location as the Owner may direct, with the Owner, owners of the Adjoining Premises and Separate Contractors to discuss the coordination of the Work with the work of such Separate Contractors; detailed minutes of such meetings shall be prepared by the Construction Manager for the Owner's review and approval, and thereafter promptly provided to the Owner and the other meeting participants; and

d. coordinate all Work with the Separate Contractors, including delivery, offloading, storage, protection, hoisting and distribution of equipment and materials on the Project Site.

4.6.7 If the Construction Manager or any of the Subcontractors or anyone for whom they may be liable or responsible cause damage to the Work or any work being performed on Adjoining Premises, the Construction Manager shall promptly remedy such damage.

4.6.8 If part of the Work depends for proper execution or results upon the construction or operations by any Separate Contractor, the Construction Manager shall, prior to proceeding with that portion of the Work, thoroughly inspect and perform any reasonable or customary tests, and shall promptly report in writing to the Owner and the Design Professionals any discrepancies or defects discovered in such other construction which would render it unsuitable for such proper execution and results.

4.7 Safety Precautions and Programs

4.7.1 In performing the Work and all other Services under this Agreement, the Construction Manager shall provide for the Owner's approval, and shall observe and comply with all of the terms and conditions of, a site-specific safety plan for the Project, attached hereto as Exhibit G.

4.7.2 The Owner places, and requires the Construction Manager to place, the highest importance on health and safety during performance of the Work by the Construction Manager. The Construction Manager shall, at all locations where Work is to be performed, comply with all Applicable Laws and Specifications regarding health and safety matters. The Construction Manager shall also ensure that all of its employees are made aware of all safety, fire and health requirements and regulations applicable to the Work to be performed pursuant to the Contract Documents.

4.7.3 The Construction Manager shall designate a responsible member of the Construction Manager's organization at the Project Site or, at the Owner's request and expense, hire an independent site safety company, whose duty shall include the prevention of accidents and the enforcement of safety codes and regulations. This person shall not be the Construction Manager's superintendent unless otherwise approved in writing by the Owner.

4.7.4 Without the prior written consent of the Owner, the Construction Manager shall not bring onto the Project Site or use in the Work any Hazardous Materials. If the Construction Manager encounters at the Project Site materials reasonably believed to be Hazardous Materials, which have not been rendered harmless and for which no express provision has previously been made in the Contract Documents, the Construction Manager shall immediately stop Work in the area affected and notify the Owner of the condition in writing. The Work in the affected area shall be resumed when the

Construction Manager has been provided with documentation that the Hazardous Materials have been removed or rendered harmless.

4.7.5 Provided that the Construction Manager has complied with the requirements of Section 4.7.4, is not responsible for introducing Hazardous Materials on to the Project Site and to the extent not a part of the Work, to the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Construction Manager, Subcontractors, and agents and employees of any of them from and against claims, damages, losses and expenses, including reasonable attorneys' fees, arising out of performance of the Work that results in exposure to Hazardous Materials, provided that such claims, damages, losses and expenses are the result of bodily injury, death or damage to tangible property, and only to the extent that such claims, damages losses and expenses are not the result of the negligence of the party seeking indemnity.

4.7.6 The Construction Manager shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work, including safety of all persons and property during performance of the Work. This requirement shall apply continuously throughout the course of the Work and shall not be limited by normal working hours. The Construction Manager shall take all reasonable precautions and safety measures, including those listed in the Contract Documents, for the safety of, and shall, without limitation, provide reasonable protection to prevent damage, injury or loss to:

- i. all employees of the Construction Manager and Subcontractors and all other persons who may be affected by the Work;
- ii. the Owner's property and all the Work to be incorporated therein, whether in storage on or off the Project Site, under care, custody or control of the Construction Manager or Subcontractors or sub-subcontractors;
- iii. other property at the Project Site or adjacent thereto, including trees, shrubs, lawns, stairways, passageways, halls, walks, pavements, roadways, structures, systems, equipment and utilities; and
- iv. the Owner, and its Affiliates, tenants, and their respective employees and property, guests, visitors and invitees to the Project Site.

4.7.7 The Construction Manager shall promptly report to the Owner, and promptly, in accordance with the Project Communications Program, remedy, any damage or loss to property caused in whole or in part by the Construction Manager, a Subcontractor, a sub-subcontractor or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.

4.7.8 The Construction Manager shall promptly report in writing to the Owner, and in accordance with the Project Communications Program, all accidents whatsoever and any significant or unusual events arising out of, or in connection with the performance of the Work, whether on or adjacent to the Project Site.

4.7.9 The Construction Manager shall not knowingly permit to exist a hazardous, unsafe, unhealthy or environmentally unsound condition or activity over which the Construction Manager has control at any location where the Work is to be performed. In the event that the Construction Manager becomes aware of such condition or activity, the Construction Manager shall promptly notify the Owner and immediately take whatever steps which are necessary to eliminate, terminate, abate and rectify such condition or activity.

4.7.10 In the event that any portion of the Project constitutes a hazard to persons or property, in the Owner's sole discretion, the Owner may immediately direct the Construction Manager to suspend the Work until such hazard has been removed. The Construction Manager shall not resume the Work until conditions permit, in the Owner's sole discretion, the safe resumption of the Work. In the event that removal of such hazard requires performance of stabilization or other protective work, and the Construction Manager does not promptly commence and diligently prosecute to completion such stabilization or other protective work, then the Owner may, upon fifteen (15) days written notice to the Construction Manager, perform or cause to be performed such stabilization or other protective work at the sole cost and expense of the Construction Manager, provided such hazard was the result of actions or inactions of the Construction Manager or person for whom the Construction Manager is responsible.

4.7.11 If the Owner requests that the Construction Manager provide safeguards not currently in use at the Project Site but reasonably considered by the Owner to be necessary, whether or not required by Applicable Laws or the Specifications, and if the Construction Manager fails to provide the requested safeguards within five (5) days after notice thereof, the Owner may provide the safeguards at the Owner's sole cost and expense. Notwithstanding the foregoing, in the event of an emergency, the Owner may provide such safeguards without providing the Construction Manager notice thereof. Neither such a request for safeguards nor the provision of such safeguards by either the Construction Manager or the Owner shall relieve the Construction Manager of its sole responsibility to maintain safe and efficient working conditions at all locations where the Work is to be performed. To the extent that the Construction Manager fails to provide any safeguards required by the Contract Documents or Applicable Law, then it shall be responsible for the costs to provide such safeguards.

4.7.12 In an emergency affecting the safety of persons or property, the Construction Manager shall immediately attempt to contact and seek direction from the Owner's Representative. In the event the Construction Manager is unable to contact the Owner's Representative, the Construction Manager shall act, at the Construction Manager's reasonable and prudent discretion, to prevent threatened damage, injury or loss, and shall immediately notify the Owner of the emergency.

4.8 Permits and Approvals

4.8.1 The Construction Manager shall (a) identify in a written report, in cooperation with the Owner's Representative and the Design Professionals where required, all Permits required for commencement, continuation and completion of construction and occupancy of the Project, and the costs associated with obtaining each of the same, (b) assist in completing the documents and schedules required in connection with any such Permits, and (c) at the Owner's request, attend, through its project manager or such other Key Personnel reasonably acceptable to the Owner, all hearings and meetings with Governmental Authorities pertaining to such Permits.

4.8.2 The Construction Manager shall provide a log to the Owner of, and collect from all Subcontractors, all Permits that are required pursuant to the applicable Subcontracts. The Construction Manager shall cause such permits that are required for completion of the Work to be opened and continuously maintained without interruption during the performance of the Work.

4.8.3 The Construction Manager shall perform the Work and all other Services in compliance with all necessary Permits.

4.9 Construction Means and Methods

4.9.1 The Construction Manager shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures for the Work, and for coordinating all portions of the Work under the Contract Documents or otherwise required by good construction industry practice or Applicable Laws and Specifications. The Construction Manager understands and acknowledges that although certain construction means, methods, techniques, sequences or procedures necessary to the completion of the Work may be referenced in the Contract Documents, it shall remain responsible for and have control over the construction means, methods, and techniques necessary to comply with such sequences and procedures. The Construction Manager shall review the construction means, methods and techniques specified in the Contract Documents, and notify the Owner and the Design Professionals if the Construction Manager objects to any of the means, methods or techniques, or determines that any of the specified means, methods or techniques would deviate from customary and accepted construction practices or violate any warranty.

4.10 General Conditions Work

4.10.1 The Construction Manager shall perform the General Conditions Work in a manner that facilitates the expeditious, safe and economic prosecution of the Work.

4.11 Performance of Work; Correcting Defective Work

4.11.1 The Construction Manager shall observe, monitor, oversee and supervise the Work so that it is performed in accordance with the requirements of the Contract Documents, Applicable Laws, and Specifications and sound construction industry standards and practices and generally to guard the Owner against defects and deficiencies in the Work, and advise the Owner and the Design Professionals of any such defects or deficiencies.

4.11.2 The Construction Manager shall cause the full, complete and timely performance of all Work in strict accordance with the terms and provisions of this Agreement and all Subcontracts. The Construction Manager shall review the Work done by Subcontractors to determine whether the Work is being performed in accordance with the requirements of the Contract Documents and to guard the Owner against defects and deficiencies in the Work. If, during the progress of the Work, the Construction Manager's personnel discover work being performed contrary to the Contract Documents or sound construction practices and procedures, the Construction Manager shall reject such Work and promptly notify the Architect and the Owner of such, and make recommendations to the Owner regarding possible methods of correcting such defective or deficient Work. The Construction Manager shall require Subcontractors, in accordance with the requirements of the respective Subcontract, to promptly correct any such defective or non-conforming Work. If the Subcontractors fail to correct such defective or non-conforming Work promptly, then the Construction Manager, at its sole cost and expense, (subject to use of available Contingency, if any) shall correct such Work in an expeditious and economic manner, with its own forces or through other Subcontractors.

4.11.3 If and when directed by the Owner, the Construction Manager shall require a Subcontractor to stop Work or any portion thereof and require special inspection or testing of any Work suspected by the Owner or the Architect not to be in accordance with the Contract Documents, whether or not such Work has been fabricated, installed or completed. If, at any time before the completion of all inspections, approvals and the Owner's acceptance of the Work, the Construction Manager (or the Owner) has reasonable cause to believe that any Work is not in accordance with the Contract Documents, the Owner shall be so advised and the Owner may direct the Construction Manager to remove or uncover, or cause to be removed or uncovered, any portion of the completed Work. If the

uncovered Work is determined not to have been in accordance with the Contract Documents, the removal or uncovering shall be at the Construction Manager's own cost and expense (subject to use of available Contingency, if any), otherwise the cost of such removal or uncovering shall be deemed a Cost of the Work and, if applicable, an appropriate Change Order will be issued to account for the cost and time of such removal or uncovering. After examination, the Construction Manager shall restore (or cause to be restored) the Work to the standard required by the Contract Documents, as directed by the Owner, which restoration shall be at the Construction Manager's own cost and expense (subject to use of available Contingency, if any) if the uncovered Work is determined not to have been in accordance with the Contract Documents, otherwise the cost and time thereof shall be deemed a Cost of the Work and, if applicable, an appropriate Change Order will be issued to account for the cost of such restoration.

4.11.4 The Construction Manager shall monitor the performance by Subcontractors of correction of defective or non-conforming Work, including performance of all guarantees and warranties given by Subcontractors or delivered pursuant to the Contract Documents.

4.11.5 The Construction Manager is not required to ascertain that the Contract Documents are in accordance with Applicable Laws. Notwithstanding the foregoing, if the Construction Manager performs Work, or activities related thereto, knowing or having reason to know of a Design Defect, and fails to so notify the Owner and the Design Professionals prior to commencing such performance, the Construction Manager shall be solely responsible for such performance, the correction thereof, and costs, expenses, or damages arising therefrom (subject to use of available Contingency, if any).

4.12 Separate Contractors

4.12.1 Upon the Owner's request, the Construction Manager shall review some or all of the terms and conditions of the contract between the Owner and Separate Contractors relating to the definition of scope of work for such contract to ensure that the interface between the Work and the work of the Separate Contractors is well and properly defined and that provisions contained therein fulfill the requirements for a coordinated and cooperative performance of work at the Project Site by all parties without any gap or overlap in such performance. Within five (5) days of such request by the Owner, the Construction Manager shall provide its written comments on the definition of the scope of work of such contract to the Owner. If requested by the Owner, the Construction Manager shall meet with the Owner or the Separate Contractor to review and resolve any issues with respect to the interface between the Work and the work of such Separate Contractor.

4.12.2 The Construction Manager shall coordinate the Work with the work of Separate Contractors, including but not limited to delivery, offloading, storage, protection, hoisting and distribution of equipment and materials on the Project Site, in order to facilitate the timely, efficient and safe completion of the Work and the work of the Separate Contractors, which coordination shall afford such Separate Contractors reasonable opportunity for the installation, execution and storage of their respective work and materials, and shall otherwise be performed in such manner as the Owner may direct provided that the Construction Manager shall not be liable for the Separate Contractor's Work. The Construction Manager shall cooperate in good faith with the Separate Contractors in order for all contractors working on the Project to have the opportunity to complete their work on a timely, cost effective and safe basis.

4.12.3 The Construction Manager shall perform all preparation of the Work required in order to receive the work of Separate Contractors and shall advise such Separate Contractors of any such preparation. The Construction Manager shall advise Separate Contractors of any preparation of

their work required in order to receive the Work, and shall provide such Separate Contractors in a timely manner with location and scheduling plans and items to be built into their work.

4.12.4 If the Construction Manager or any of the Subcontractors or anyone for whom they may be liable or responsible cause damage to the Work or property of the Owner or the Separate Contractors, or to other work on the Project Site or the Project Site itself, the Construction Manager shall promptly remedy such damage at its sole cost and expense. The Owner shall use commercially reasonable efforts to include a provision similar to this Section 4.12.4 in agreements entered into with Separate Contractors.

4.13 Shop Drawings, Samples and Product Data

4.13.1 Within fifteen (15) days of the execution of this Agreement, the Construction Manager shall provide, for the Owner's review and approval, a preliminary schedule of all Submittals, and upon approval of the GMP, a final schedule of all Submittals required for completion of the Work.

4.13.2 By approving and submitting Submittals, the Construction Manager represents that it has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that it has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents, and the work of Subcontractors. The Construction Manager shall provide 4-D (3-D, plus schedule) modeling for all coordination. All modeling shall comply with the requirements set forth in the BIM Specifications, as set forth in Exhibit BB.

4.13.3 Incomplete Submittals or Submittals containing excessive errors will be returned unchecked and any delay caused thereby will be the responsibility of the Construction Manager.

4.13.4 The Construction Manager shall allow not less than ten (10) Work Days for Submittal review and approval by the Design Professionals and such period of review shall not be a basis for any claim of delay in the progress of the Work, unless such review period conflicts with the Submittal schedule approved by the Owner. In the event the review extends beyond of the Submittal schedule approved by the Owner, including additional time for non-typical Submittals, and the Construction Manager has timely provided the Submittal for review and approval, the appropriate Change Order will be issued to account for the cost and time due to the delay caused by such extended review; provided however, that the Construction Manager has taken steps to mitigate any damage.

4.13.5 The Construction Manager shall provide off-site mock ups as required by the Contract Documents for the Owner's and Design Professionals' review and approval. All mock ups shall comply with all specifications and be in such sizes as may be required by the Owner and Design Professionals. All ground transportation as required for the review of mock ups by the Owner and Design Professionals shall be provided by the Construction Manager.

4.13.6 The Construction Manager shall allow not less than five (5) Work Days for request for information review by the Design Professionals and such period of review shall not be a basis for any claim of delay in the progress of the Work.

4.13.7 The Construction Manager shall allow not less than fifteen (15) Work Days for structural job standard review by the Design Professionals and such period of review shall not be a basis for any claim of delay in the progress of the Work.

4.14 Project Meetings

4.14.1 The Construction Manager shall schedule, organize and conduct meetings related to the Work at the Project Site or such other location as the Owner may direct, with the Owner, the Design Professionals and the applicable Subcontractors and Separate Contractors, as often as necessary but no less frequently than weekly, or as otherwise requested by the Owner. The Construction Manager shall prepare minutes of each such meeting for the Owner's review, and upon the Owner's approval, promptly furnish the same to all parties invited to attend such meeting.

4.14.2 The Construction Manager shall schedule, organize and conduct fabricator site visits related to the Work with the Owner, the Design Professionals and the applicable Subcontractors and Separate Contractors, as often as necessary, or as otherwise requested by the Owner. The Construction Manager shall prepare minutes of each such fabricator site visit for the Owner's review, and upon the Owner's approval, promptly furnish the same to all parties invited to attend such meeting.

4.15 Meetings

4.15.1 At the Owner's request, the Construction Manager shall attend, through one or more of its Project personnel, all meetings related to the Project's design and approval. At the Owner's request, the Construction Manager shall attend meetings or public hearings relating to the Project or work being performed on Adjoining Premises. The Construction Manager shall review all meeting minutes for accuracy and provide written clarification to the Owner and other designated parties, when necessary. To the extent requested by the Owner, the Construction Manager shall prepare minutes of any meetings that the Construction Manager attends.

4.16 Required Coordination

4.16.1 Without limiting any coordination obligations specifically imposed on the Construction Manager by other provisions of the Contract Documents, the Construction Manager shall coordinate all activities with the Owner's Project staff. The Construction Manager shall cooperate with all Governmental Authorities, with respect to any reasonable requests made in connection with the Project, including but not limited to attending meetings with such Governmental Authorities.

4.16.2 To the extent necessary, the Construction Manager shall prepare such specialized documentation, including project scheduling data in accordance with any requirements imposed on the Project by any Governmental Authorities.

4.17 Compliance with Applicable Provisions, and Future Agreements

4.17.1 The Construction Manager shall comply with any and all requirements of the Applicable Provisions. Excepting any Applicable Provisions, if any, the Owner may, at its election, deliver to the Construction Manager the provisions that govern or otherwise pertain to the Project of any one or more agreements or instruments in respect of the Project not currently included in Exhibit H, and, subject to Section 4.17.3, Exhibit H shall then be amended to include such provisions.

4.17.2 Subject to Section 4.17.3, the Construction Manager shall perform the Work and all other Services in compliance with the Applicable Provisions and future provisions as advised by the Owner, and assist and cooperate with the Owner, upon the Owner's request, in connection with the obligations of the Owner under the Applicable Provisions and any future agreements that pertain to the Project. Said assistance and cooperation shall include, but not be limited to, responding promptly to any reasonable inquiries or requests by the Owner or any other governmental agency or entity related to the

Project. Any such responses must be reviewed and approved by the Owner prior to submission to the requesting party. The Construction Manager shall not act, or omit to act, so as to cause the Owner to be in noncompliance with the requirements of the Applicable Provisions or future provisions.

4.17.3 In the event that compliance with the terms of any such future agreements requires an increase in the scope of the Work which is neither inferable from nor implied by the Drawings and Specifications, or a material increase in Construction Manager's liability under this Agreement, the same shall be deemed to constitute a Change under this Agreement.

4.18 Compliance with Law

4.18.1 The Construction Manager shall perform the Work and all other Services in compliance with, and ensure that the performance of the Work conforms to, all Applicable Laws and Governmental Authorities, including but not limited to ordinances, orders, rules, regulations and requirements of all Federal, state and municipal governments, courts, departments, commissions, board and offices, or any other body exercising the functions similar to those of any of the foregoing which may be applicable to Work being performed pursuant to this Agreement, provided, however, that any costs incurred by the Construction Manager as a result of its conformance to Applicable Laws and Governmental Authorities not in force as of the date of this Agreement will result in a Scope Change, but only to the extent that the Construction Manager did not know and could not have been reasonably expected to know of such changes to Applicable Laws and Governmental Authorities.

4.18.2 The Construction Manager represents and certifies that neither the Construction Manager, nor any partner or member of the Construction Manager, nor any owner of a direct or indirect interest in the Construction Manager (i) is listed on any Government Lists (defined below), (ii) is a person who has been determined by competent authority to be subject to the prohibitions contained in Presidential Executive Orders No. 13224 (Sept. 23, 2001) or any other similar prohibitions contained in the rules and regulations of OFAC (defined below) or in any enabling legislation or other Presidential Executive Order in respect thereof, (iii) has been previously indicted for or convicted of any felony involving a crime or crimes of moral turpitude or for any Patriot Act Offense (defined below), or (iv) is not currently under investigation by any governmental authority for alleged criminal activity. For the purposes hereof, "Government Lists" means (i) the Specially Designated Nationals and Blocked Persons Lists maintained by Office of Foreign Asset Control ("OFAC"), (ii) any other list of terrorists, terrorist organizations or narcotics traffickers maintained pursuant to any of the Rules and Regulations of OFAC, or (iii) similar lists maintained by the U.S. Department of State, the U.S. Department of Commerce or any other governmental authority. For the purposes hereof, "Patriot Act Offense" means any violation of the Patriot Act or of the criminal laws of the U.S.A. or any of the several states relating to terrorism of the laundering of monetary instruments, including the Bank Secrecy Act and the Money Laundering Control Act of 1986. To the fullest extent permitted by law, the Construction Manager agrees to defend, indemnify and hold harmless the Owner from and against any and all claims, damages, losses, risks, liability and expenses (including attorney's fees and costs) arising from or related to any breach of the foregoing certification. The provisions of this Section 4.18.2 shall survive the completion of the Construction Manager's Services under this Agreement and the expiration or termination of this Agreement.

4.18.3 Ethical Conduct / Anti-Bribery and Corruption.

a. The Construction Manager acknowledges that the Owner is committed to having the Services performed in accordance with the highest ethical standards applicable to, or governing, the conduct of construction practice. In furtherance thereof, the Construction Manager hereby agrees to comply with and observe all Applicable Laws, and all other professional and ethical guidelines governing

performance of the Services. Accordingly, the Construction Manager shall comply with the Integrity Provisions as set forth in Exhibit FF hereto.

b. In consideration of Owner contracting for the provision of the Services with the Construction Manager as set forth in this Agreement, the Construction Manager hereby acknowledges, certifies, warrants and undertakes to the Owner that:

i. it has not offered, promised, given or agreed to give and shall not during the term of this Agreement offer, promise, give or agree to give to any person or entity any bribe on behalf of the Owner or otherwise with the object of obtaining a business advantage for the Owner or otherwise;

ii. it will not engage in any activity or practice which would constitute an offence under any applicable anti-bribery and/or anti-corruption laws, including but not limited to the United States *Foreign Corrupt Practices Act of 1977*;

iii. it has, and will maintain in place, its own policies and procedures to ensure compliance with any applicable anti-corruption laws;

iv. it will ensure that any person who performs or has performed services for or on its behalf in connection with this Agreement complies with the terms and conditions set forth in this Section 4.18.3(b);

v. it has, and will maintain in place, effective accounting procedures and internal controls necessary to record all expenditures in connection with this Agreement, which enable the Construction Manager and the Owner to readily identify the Construction Manager's financial and related records in connection with this Agreement;

vi. from time to time during the term of this Agreement, at the reasonable request of the Owner, the Construction Manager will confirm in writing that it has complied with its undertakings under this Section 4.18.3(b);

vii. shall notify the Owner as soon as practicable of any breach of any of the undertakings contained in this Section 4.18.3(b); and

viii. it shall explicitly include the obligations in this Acknowledgment in any subcontracts or agreements formed between the undersigned and any subcontractors to the extent that those subcontracts or agreements relate to fulfillment of the Construction Manager's obligations to the Owner under this Agreement.

4.19 Interpretation of Contract Documents

4.19.1 The Construction Manager shall assist the Owner, the Owner's Representative and the Design Professionals when any Subcontractor requests interpretations of the Contract Documents, promptly give notice to the Owner and the Design Professionals of any dispute, claim or potential claim which may arise during construction of the Project, assist in the resolution of any such dispute or claim in accordance with the Owner's directions and make recommendations regarding settlement of such disputes and claims. In the event that any dispute arises between the Construction Manager or any

Subcontractor and the Design Professionals in connection with the Drawings or the Specifications, the interpretation of the Design Professionals, subject to the filing of any claim pursuant to the terms of this Agreement, shall be binding, to the extent that such interpretation is consistent with, and reasonably inferable from, the Contract Documents.

4.19.2 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

4.20 Labor and Labor Relations

4.20.1 The Construction Manager shall review the availability of all appropriate categories of labor for all phases of the Work and make recommendations for actions designed to minimize adverse effects of potential labor shortages.

4.20.2 The Construction Manager shall make recommendations and render assistance regarding labor disputes and jurisdictional disputes.

4.20.3 The Construction Manager shall use all reasonable efforts to maintain good relations with labor unions as well as minority and other related interest groups to maintain peaceful labor relations and a trouble-free job site for the duration of the Work and advise the Owner of any anticipated problems in connection therewith. The Construction Manager agrees to promptly remove or cause to be removed from on or about the Project Site all persons hired or engaged by it who are actively creating labor disharmony, and to otherwise cooperate in providing separate accommodations and accesses to the extent necessary and appropriate in connection with the construction of the various improvements upon the Project Site. In no event shall the Owner or Construction Manager be expected or obligated to engage in any conduct which is in conflict with or violates any federal, state or local law including, without limitation, the National Labor Relations Act or the regulations implemented with respect thereto. The Construction Manager shall make recommendations and render assistance to the Owner regarding labor disputes and jurisdictional disputes and advise the Owner regarding means and methods to avoid same, and, at the Owner's direction, implement such means and methods. To the extent, if any, that the Owner chooses to give the Construction Manager directions regarding labor relations or any problems or disputes in connection therewith, the Construction Manager shall abide by such directions, provided that the Construction Manager shall not be required to take any action in violation of any applicable collective bargaining agreement.

4.21 Regulatory Submissions and Governmental Hearings

4.21.1 The Construction Manager shall assist in completing the relevant documents and schedules for any regulatory submissions required for any local, state or federal agency approvals. The Construction Manager shall attend, through its project manager or such other Key Personnel reasonably acceptable to the Owner, all hearings as required by the Owner, including those concerning violations issued by any Governmental Authorities.

4.22 Legal Proceedings

4.22.1 In addition to its obligations under Section 16.2, the Construction Manager, at no additional cost to the Owner, shall assist and cooperate with the Owner in legal actions or proceedings that may arise out of or relate to the Work (excluding actions or proceedings where the Owner is adverse to the Construction Manager), including appearances and testimony, as reasonably necessary. Notwithstanding the foregoing, the Owner shall pay all reasonable costs associated with the

Construction Manager's cooperation in connection with legal actions or proceedings instituted after Final Completion, provided the Construction Manager is not a party to such legal action or proceedings.

4.22.2 The provisions of this Section 4.22 shall survive Final Completion of the Project or the earlier termination of this Agreement.

4.23 No Discrimination

4.23.1 The Construction Manager shall not discriminate against employees or applicants for employment because of race, creed, color, religion, national origin, ancestry, sex, age, disability or marital status, shall comply with all Applicable Laws prohibiting such discrimination or pertaining to equal employment opportunities and shall comply with the Owner's diversity requirements to ensure that employees and applicants for employment are afforded equal employment opportunities without discrimination. Such action shall be taken with reference to, but not limited to, recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.

4.23.2 The Construction Manager shall request each employment agency, labor union and authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish it with a written statement that such employment agency, labor union or representative will not discriminate because of race, creed, color, religion, national origin, ancestry, sex, age, disability or marital status and that such agency, union or representative will cooperate in the implementation of the Construction Manager's obligations hereunder.

4.23.3 The Construction Manager shall state in all solicitations or advertisements for employees placed by or on behalf of the Construction Manager that all qualified applicants shall be afforded equal employment opportunities without discrimination because of race, creed, color, religion, national origin, ancestry, sex, age, disability or marital status.

4.23.4 The Construction Manager shall include in all Subcontracts the foregoing provisions of this Section 4.23 in such a manner that such provisions shall be binding upon the Subcontractor and enforceable by the Construction Manager and the Owner. The Construction Manager shall take such action as may be necessary to enforce the foregoing provisions, and shall promptly notify the Owner of any litigation commenced by or against it arising out of the application or enforcement of these provisions, and the Owner may intervene in any such litigation.

4.24 LEED

4.24.1 The Construction Manager shall review and provide the Owner, Design Professionals and the Owner's LEED consultants with all analysis relating to the necessary materials, methodologies, and costs associated with obtaining LEED Certification.

4.24.2 The Construction Manager shall maintain at least one (1) Key Employee who is certified as a LEED Accredited Professional and is knowledgeable and experienced in obtaining LEED Certification.

4.24.3 Without limiting any other provision of this Agreement, The Construction Manager shall perform any and all other services necessary to permit the completion of the Work in accordance with the LEED Certification requirements of Exhibit AA.

4.25 Quality Control Program

4.25.1 The Construction Manager shall establish, implement and maintain a quality control program (“QCP”), subject to the written approval by the Owner, for all stages of construction, including the turn-over of each floor, in order to manage, control, document and assure that the Work proceeds and complies with the requirements of the Contract Documents. The Construction Manager shall submit to the Owner a proposal which sets forth the means, methods, plans, procedures, processes and organization to be utilized by the Construction Manager to implement the QCP. After acceptance by the Owner, the Construction Manager shall notify the Owner in writing of any proposed changes to the QCP, which shall be subject to the written approval of the Owner. The QCP shall also designate an individual employed or otherwise engaged by the Construction Manager who shall be responsible for ensuring the Project’s compliance with the QCP.

4.25.2 The QCP shall include plans for without limitation:

- a. review of drawings prior to the submission of bids to minimize the need for Change Orders during the Project;
- b. control of submittals, protocols and tasks for the Project; and
- c. inspection of the Work throughout the Project to minimize Change Orders and Punch List items.

4.26 Executive Construction Manager Role

4.26.1 At the Owner’s election, in its sole and absolute discretion, the Construction Manager shall also take on the responsibilities of Executive Construction Manager. The Executive Construction Manager shall be responsible as program manager for the entire Project Site (including all other separate projects that are being undertaken by the Owner at the Project Site), and shall be required to coordinate the activities of all construction managers and general contractors working at the Project Site to ensure overall coordination and communication between different projects. In the event the Owner elects to have the Construction Manager act as Executive Construction Manager, the Owner and the Construction Manager shall execute a Change Order to this Agreement setting forth the detailed scope of work to be performed by the Construction Manager as Executive Construction Manager, as well as the additional compensation to be paid to Construction Manager.

ARTICLE 5 - REPORTING REQUIREMENTS

5.1 General

5.1.1 The Construction Manager shall prepare and maintain an on-site record keeping system, including daily logs of all Changes in the Work, revisions to the Project Schedule, daily manpower and trade breakdowns, shop drawing logs, material lists and monthly job-progress reports. In addition, the Construction Manager shall provide and utilize project management software acceptable to the Owner to upload and manage all Project-related documents and correspondence. Copies of all correspondence pertaining to the Work shall be maintained by the Construction Manager and made available at all reasonable times to the Owner.

5.2 Daily Report

5.2.1 The Construction Manager's superintendent shall daily submit a Daily Report specifically detailing activities of the Construction Manager; ongoing trade work performed; daily and cumulative summaries of materials-in-place; names of all on-site companies performing Work as a Subcontractor, sub-subcontractor or supplier; individual man counts by company, accident notification, job site inspections by testing agencies or outside regulating agencies, description of weather problems encountered and deficiencies noted, and a one-day look-ahead schedule containing a concise statement of the portions of the Work planned for the following Work Day.

5.3 Weekly Report

5.3.1 The Construction Manager shall record the progress of the Work and submit Weekly Reports to the Owner, each of which shall include the following:

- a. Status of Submittals made by Subcontractors and under review by the Design Professionals.
- b. A listing of all outstanding requests by the Construction Manager or Subcontractors to the Design Professionals for information or interpretations of the Construction Documents (also referred to as "RFIs").
- c. Logs of all approved, potential and pending Change Orders.
- d. A two-week look-ahead schedule reflecting the portions of the Work to be performed in the upcoming two-week period.
- e. A four-week look-ahead schedule reflecting the anticipated transmittal of Submittals to the Design Professionals.

5.4 Monthly Report

5.4.1 The Construction Manager shall submit Monthly Reports to the Owner, each of which shall include the following:

- a. a concise statement of the outlook for meeting scheduled dates;
- b. an indication of the change in outlook from previous Monthly Reports and reasons for the change;
- c. a concise statement of significant progress on major items of Work during the report period;
- d. an itemized statement of the amount paid during the reporting period, and the aggregate amount paid to date, by the Construction Manager to each Subcontractor under their respective Subcontract, the then current Subcontract price under each Subcontract (i.e., the original price as the same may have been adjusted, from time to time, by change orders or otherwise), and the retainage then held by the Construction Manager under each Subcontract (which statement shall be provided for informational purposes only and shall not be construed to waive, modify or otherwise affect in any way the rights or obligations of the Owner or the Construction Manager under this Agreement);

- e. a description of problem areas;
- f. current and anticipated delaying factors and their impact;
- g. explanation of corrective action taken or proposed if required;
- h. additional remarks necessary to further clarify the report;
- i. a detailed report on the Cost of the Work to date and the projected Cost of the Work at Final Completion of the Project, including a breakdown for each trade of the Subcontract amount, pending Change Orders and other anticipated or projected costs, approved Change Orders, Work completed to date, payments to date, retention amounts, and payment this period;
- j. monthly and accumulated tabulations of manpower expended and work-in-place for each major trade;
- k. monthly and accumulated cash flow, and projections for the Cost of the Work and the Base Fee showing expected draw-downs through to Project completion, including a projected manpower and cash flow report for the duration of the Project that is correlated to the Project Schedule;
- l. current status of the Project Schedule (updated to show to-date progress) and schedule reconciliation narrative identifying all deviations from the Project Schedule, reasons for such deviation, and schedule recovery or mitigation programs where appropriate, including specific efforts being put forth to correct any loss of time or delay and containing a one-month look-ahead schedule reflecting the portions of the Work to be performed in the upcoming month;
- m. the current status of the procurement plan and purchasing schedule;
- n. status of material procurement and fabrication;
- o. a detailed listing (including original issue date and most current revision) of all Drawings and Specifications received by the Construction Manager to date, with those revised during the month noted;
- p. a detailed listing of all sketches and clarifications received by the Construction Manager to date, which are in effect and being implemented in the field;
- q. complete status of the Submittals, engineering and coordination of the Work;
- r. a list of major items of incomplete or deficient work for each Subcontractor and a summary of all Punch Lists; and
- s. CADD Disks containing the most recent As-Built Drawings for the Project, rendered in 3D modeling software (as applicable).

5.4.2 Three (3) copies of the Monthly Report shall be provided by the Construction Manager to the Owner on or before the tenth (10th) day of each calendar month until Final Completion of the Project.

ARTICLE 6 - CHANGES IN THE WORK

6.1 Changes by the Owner

6.1.1 The Construction Manager acknowledges and agrees that the Owner shall have the right, without nullifying any portion of the Contract Documents, to make numerous Changes. The Construction Manager acknowledges and agrees that the volume and/or extent of Changes ordered by the Owner may be substantial and that the Construction Manager shall make no claims for additional compensation based solely on the number or extent of the Changes. The review of a proposed Change or Changes by the Construction Manager and any Subcontractor, regardless of the number of such reviews, is included in the Construction Manager's Base Fee and the payments to Subcontractors under all Subcontracts, and shall not be included as an additional cost to the Owner on any Change Order.

6.1.2 Changes may be initiated by the Owner submitting to the Construction Manager a Change Order Request setting forth in detail the nature of the Change. Within twenty (20) days after receipt of a Change Order Request, the Construction Manager shall furnish to the Owner a Change Order Proposal. Each Change Order Proposal shall include (a) a detailed estimate (on a drawing-by-drawing and trade-by-trade basis) prepared by the Construction Manager's in-house estimating staff, of the projected costs relating to such Change, (b) a detailed estimate of such costs (on a drawing-by-drawing basis) from each Subcontractor impacted by the Change, and (c) a reconciliation of the two estimates. If the projected cost of a Change Order Proposal is equal to or exceeds two hundred thousand (\$200,000) and if requested by the Owner, the Construction Manager shall submit detailed estimates of cost from two additional subcontractors in addition to that provided by the Subcontractor. Time and material Change Orders shall be documented on a day-to-day basis within forty-eight (48) hours after covered Work is accomplished. If a Change Order Proposal is not delivered to the Owner within such twenty (20) day period, the Construction Manager shall be deemed to have waived its right to make any claim for an extension of any Milestone Event or adjustment to the Direct Work Cost in connection with the Changes which are the subject of such Change Order Proposal or to recover the costs of such Changes or such time period as the parties have agreed for the submission of the Change Order Proposal. When a schedule of unit prices for additions to or deletions from the Work is made a part of this Agreement or a Subcontract, and the Change Order Proposal contains unit pricing, such unit pricing shall conform to such schedule of unit prices. Once the Change Order Proposal is submitted to the Owner, the Owner shall review the Proposal within ten (10) days of its receipt of the Change Order Proposal or such other time as the parties may agree and, if the Change Order Proposal is in accordance with this Agreement and acceptable to the Owner, a Change Order will be executed promptly by the Owner and the Construction Manager but in no event more than twenty (20) business days from the Owner's acceptance.

6.1.3 If this Agreement provides for an adjustment to the GMP, General Conditions Costs, Project Schedule or Milestone Events resulting from a Change but, within five (5) days after the issuance of the Change Order Proposal requesting any such adjustment, the Owner and the Construction Manager are unable to agree upon a Change Order with respect to such adjustments, the Owner nevertheless shall have the right to issue a Directed Change Order directing the Construction Manager to proceed with the Work constituting such Change and, if applicable, providing for any adjustment in the GMP, General Conditions Costs or Milestone Events resulting from such Change. Any such adjustment in (a) the GMP or General Conditions Costs shall, at the Owner's election, equal either (i) the respective amounts therefor set forth in such Directed Change Order or (ii) the actual net increase or decrease, as the case may be, in the Direct Work Cost or General Conditions Costs, and Base Fee, as the case may be, attributable to such Change (in which latter case, such adjustments shall be determined and set forth in writing by the Owner and the Construction Manager within twenty (20) days after completion of that portion of the Work constituting such Change), or (b) the Milestone Events, if

applicable, shall, at the Owner's election, equal the period of time set forth in such Directed Change Order or, if no period is set forth therein, then the period of time, if any, fairly attributable, in the aggregate, to such Change which can be shown to have impacted the Milestone Events. Upon the Construction Manager's receipt of a Directed Change Order, the Construction Manager shall proceed with the Work constituting the Change provided for therein, promptly after such receipt or as otherwise may be required in such Directed Change Order. If the Construction Manager fails to object to a Directed Change Order or any portion thereof within ten (10) days after the Construction Manager's receipt of same, then the Construction Manager shall thereby be deemed to have (x) waived any right to object to any adjustments in the GMP, General Conditions Costs or Milestone Events provided for in such Directed Change Order or portion thereof, (y) agreed to any such adjustment, and (z) acknowledged that such adjustments, if any, shall constitute the complete and final consideration for all costs, claims, delays or damages incurred by the Construction Manager as a consequence of the Change provided for in such Directed Change Order or portion thereof; in such event, such Directed Change Order or portion thereof shall thereupon be deemed to constitute a Change Order for all purposes under this Agreement. In the event of the Construction Manager's objection to a Directed Change Order in accordance with this Section 6.1.3, the Construction Manager and the Owner shall, within fifteen (15) days of the date of such objection, meet and attempt to negotiate a resolution, and, if necessary, continue to schedule and participate in such meetings at the reasonable request of either party to attempt in good faith to resolve any continuing disputes with respect to such Directed Change Order. The Owner agrees to be reasonable in resolving any such disputes with respect to Directed Change Orders but shall not be obligated to resolve such dispute.

6.1.4 A Subcontractor will be permitted an allowance of ten percent (10%) for overhead and profit on labor performed by its own forces and its own material purchases and five percent (5%) for overhead and profit on work performed by its sub-subcontractors. A Subcontractor's sub-subcontractor will be permitted an allowance of ten percent (10%) for overhead and profit on labor performed by its own forces and its own material purchases. The aggregate allowance for overhead and profit on any portion of the Work shall be limited to fifteen percent (15%), regardless of the number of Subcontractor tiers. Neither the Construction Manager nor any Subcontractor or sub-subcontractor shall be entitled to any overhead or profit on work performed by one of its Affiliates. If the Construction Manager procures the performance of any work by anyone other than its own forces and such work, in the Owner's sole judgment, was of the kind or nature that the Construction Manager should have performed with its own forces, then the Construction Manager shall not be entitled to greater payment than that to which it would have been entitled if its own forces had furnished the labor and materials required in connection with such work.

6.2 Base Fee Adjustments

6.2.1 The Construction Manager acknowledges that the Project is dynamic and that the Owner may make numerous Changes. The Construction Manager acknowledges and agrees that the Base Fee will provide appropriate compensation to the Construction Manager with respect to the scope of the Work contemplated by the Contract Documents in effect as of the date that the GMP is established, and that the Base Fee shall not be adjusted unless all Changes through the completion of the Project cause, in the aggregate, (a) a net increase of more than the Threshold Amount in the Direct Work Cost component of the GMP, or (b) a net decrease of more than the Threshold Amount in the Direct Work Cost component of the GMP. In the event any such net increase or net decrease in the Direct Work Cost exceeds the Threshold Amount, the Base Fee shall be increased or reduced, as the case may be, three and one tenth percent (3.10%) of the amount of such incremental excess beyond the Threshold Amount, resulting in a corresponding increase or decrease, as the case may be, in the GMP.

6.3 Adjustments to General Conditions Costs

6.3.1 In the event of a net increase or net decrease in the Direct Work Cost as permitted by the terms of this Agreement, the General Conditions Costs shall be increased or reduced, as the case may be, by the amount of additional General Conditions Costs actually incurred by the Construction Manager as a result of each Change.

6.4 Claims by the Construction Manager

6.4.1 If the Construction Manager claims that it has incurred (a) an increase in the Direct Work Cost or General Conditions Costs because of, but not limited to, (i) any order by the Owner to stop the Work where the Construction Manager was not at fault, (ii) a suspension of the Work for the Owner's convenience, or (iii) failure of payment by the Owner, or (b) a delay in achieving any of the Milestone Events by reason of a Change or an Unavoidable Delay, and this Agreement does not prohibit the Construction Manager from obtaining an increase in the GMP or General Conditions Costs by reason of such increase in the Direct Work Cost or General Conditions Costs, as the case may be, or being granted an extension of the applicable Milestone Event, as the case may be, by reason of such event, the Construction Manager shall make such claim as provided in Article 16 hereof.

6.4.2 The Construction Manager shall give the Owner notice of any claim pursuant to Section 6.4.1 hereof (or otherwise) and a Change Order Proposal within fifteen (15) days after receiving actual knowledge concerning the occurrence of the event giving rise to such claim. Such notice shall be delivered by the Construction Manager before proceeding to execute the Work, except in an emergency endangering life or property, and shall be a condition precedent to any further consideration of the claim. No such claim shall be valid unless so made within such ten (10) day period. Any increase in the GMP or General Conditions Costs or extension of any Milestone Event resulting from such claim shall be authorized only by Change Order executed by both parties.

6.5 Change Orders

6.5.1 In the event the Owner and the Construction Manager agree on the scope and amount of a Change, they shall execute a Change Order within fifteen (15) days of the Owner agreement.

6.5.2 If unit prices are subsequently agreed upon, and if the quantities originally contemplated are so changed in a proposed Change Order or, as a result of several Change Orders, that the Construction Manager is able to realize lower unit prices, the applicable unit prices shall be decreased to equal such lower price.

6.6 Changes Authorized by the Owner's Representative

6.6.1 Only the Owner and the Owner's Representative shall have authority to order Field Proceed Orders, which shall essentially be clarifications of the Contract Documents, not involving an increase in the GMP or the General Conditions Costs or an extension of any Milestone Event and not inconsistent with the intent of the Contract Documents. Such Field Proceed Orders may be effected by written order and shall be binding on the Owner and the Construction Manager. If the Construction Manager believes that any Field Proceed Order will result in an increase in the GMP or the General Conditions Costs or a delay in achieving any Milestone Event, then the Construction Manager shall notify the Owner of the same immediately and shall not proceed with performing the work ordered in such Field Proceed Order without first obtaining the Owner's written consent thereto.

6.7 Change Management Requirements

6.7.1 The Construction Manager shall provide for the Owner's written approval written procedures to follow and form documents to use in connection with Changes, claims by the Construction Manager for cost or schedule adjustments, and the proposed utilization of the Contingency. Upon approval by the Owner, the Construction Manager shall comply with such procedures and utilize such form documents, and cause the Subcontractors to do the same, with respect to any such Changes, claims or proposed utilization.

ARTICLE 7 - TESTS AND INSPECTIONS

7.1 Tests and Inspections

7.1.1 Except for those special inspections that are not typically provided by contractors for architectural and structural issues, the Construction Manager shall identify those tests and inspections as shall be necessary or appropriate, and shall cause to be conducted by an independent testing laboratory or entity acceptable to the Owner, or by the appropriate Governmental Authority, all such tests and inspections and any additional inspections that the Owner or a Governmental Authority may require, which tests and inspections shall be paid for by the Owner except as provided herein. The Construction Manager shall give the Owner and the Design Professionals timely notice of when and where tests and inspections are to be made so that they may observe the same. With respect to special inspections, the Owner, through the appropriate specialist, shall identify and cause to be conducted such inspections, and shall promptly notify the Construction Manager of same.

7.1.2 If any such tests or inspections reveal failure of any portion of the Work to comply with requirements established by the Contract Documents, the Construction Manager (subject to use of the Contingency, if applicable) shall bear the costs of these tests and inspections and all costs made necessary by such failure, including the cost of repeated procedures and compensation for the services and expenses of the Design Professionals.

7.1.3 Acceptance by the Owner or the Design Professionals of test data or inspections of any portion of the Work shall not relieve the Construction Manager of its obligation to cause the Work to be performed in accordance with the Contract Documents.

7.1.4 With respect to all inspections, including special inspections, the Construction Manager shall provide access to the Work for representatives and inspectors of Governmental Authorities and independent testing laboratories to inspect and observe the Work, and, if requested by the Owner, shall give such representatives timely notice of the time and location of scheduled tests and inspections.

7.1.5 The Owner and its invitees shall be permitted to inspect the Work, or any portion thereof, at any time. The Construction Manager agrees to facilitate and, upon request of the Owner, attend such inspection.

ARTICLE 8 - SUBCONTRACTORS

8.1 Work of Subcontractors

8.1.1 All portions of the Work that the Construction Manager does not perform with its own forces, and all materials and equipment that the Construction Manager does not supply, shall be performed or supplied by Subcontractors pursuant to Subcontracts.

8.2 Bidding and Negotiation; Approvals of Subcontracts

8.2.1 Prior to the issuance of requests for Subcontractor bids, the Construction Manager shall submit its list of potential bidders invited to bid the various packages of the Work to the Owner and advise the Owner of any information in its possession as to the qualifications of proposed subcontractors on such list. To the extent commercially practicable, the aforesaid bidders' list shall include a minimum of five (5) qualified bidders with the goal of securing at least three (3) qualified responsive bids for each division of the Work unless a lesser number is approved by the Owner for a particular division. The Owner shall have the right to reject any proposed subcontractor for any reason or no reason, or substitute or add additional subcontractors to the list of bidders for any division of the Work; provided that if a qualified, responsive, responsible Subcontractor is acceptable to the Construction Manager and the Owner requires an award to another bidder after the GMP has been established, then the Construction Manager shall be entitled to a corresponding adjustment of the GMP. The Owner shall also have the right to require the Construction Manager to use a particular Subcontractor or to purchase any of the materials for the Work directly; provided that the Construction Manager will not be required to work with any Subcontractor to which it has a reasonable objection related to safety, performance, or financial issues affecting such Subcontractor.

8.2.2 The Construction Manager shall, in consultation with the Owner, the Owner's Representative and the Design Professionals, request bids from the various proposed subcontractors on the list approved by the Owner and, in cooperation with the Owner, the Owner's Representative and the Design Professionals, meet with bidders for each trade for the purpose of explaining the scope of the Work. Additionally, the Construction Manager shall prepare comprehensive bid documents for submission to proposed subcontractors and shall submit such documents to the Owner for approval at least five (5) Work Days prior to submission to the proposed subcontractors.

8.2.3 The Construction Manager shall direct all bidders to deliver their bids to the Construction Manager. The Construction Manager shall forward a copy of all bids received to the Owner. The Owner shall have the right, at its election, to actively participate with the Construction Manager in the solicitation and selection of proposed subcontractors, including bid solicitations, bid reviews, and subcontractor interview meetings, evaluations and negotiations. Notwithstanding such participation by the Owner, the Construction Manager shall be solely responsible to the Owner for the performance of each Subcontractor

8.2.4 The Construction Manager shall review with prospective subcontractors all methods and materials that may be used in connection with the Work and make recommendations to the Owner and, if requested by the Owner, to the Design Professionals, concerning changes, if any, to the Drawings and Specifications.

8.2.5 All bids shall be opened by the Construction Manager in the presence of the Owner's Representative. The Construction Manager shall negotiate the most favorable terms and price for each Subcontract subject to the approval of the Owner. If any or all of the bids are higher than that which is allocated in the Budget, upon request by the Owner, the Construction Manager shall engage in further value engineering in cooperation with the Owner, the Owner's Representative and the Design Professionals, as necessary, and re-bid any or all of the Work until such bids satisfy the Budget and all other terms of this Agreement, subject to the further approval of the Owner.

8.2.6 The respective subcontract work shall be awarded to the most responsible bidder, as reasonably determined by the Owner and the Construction Manager. After receiving a recommendation from the Construction Manager concerning a prospective subcontractor, approval of a prospective subcontractor by the Owner shall be made within ten (10) days for Subcontracts with contract values of

less than five million dollars (\$5,000,000), or fifteen (15) days for Subcontracts with contract values exceeding five million dollars (\$5,000,000). The subcontract price awarded shall be a lump sum or based on unit prices, shall be broken down into a schedule of values, and shall be subject to the written approval of the Owner prior to the award. The Construction Manager shall document the award of all subcontract work and shall provide to the Owner for its approval, prior to award, an award letter in the form attached hereto as Exhibit Y, which shall include closing notes and a budget for the subcontract work. The Construction Manager may request the Owner's approval for a Subcontract to contain allowances or alternates for certain portions of the Work covered by such Subcontract. The awarded subcontract price shall not be adjusted (except in connection with approved allowances) without the prior approval of the Owner, granted pursuant to a Change Order, subcontract approval letter or other written instrument, as appropriate.

8.2.7 Each Subcontract shall be prepared based on the Construction Manager's form of subcontract attached hereto as Exhibit I. The Construction Manager acknowledges and agrees that, even though the Owner may have proposed revisions to the draft of such subcontract form, Exhibit I represents the product of the Construction Manager's own thorough and deliberate preparation and revisions. The Subcontracts shall contain provisions substantially similar to Articles 6, 11, 12, 13, 19 and Sections 2.1.3, 4.3, 4.4.2, 4.23, 8.3.2, 14.5.1 and 14.5.2. In addition, each Subcontract shall contain a provision substantially similar to the following:

The Subcontractor acknowledges and agrees that the Construction Manager, and following an assignment to the Owner, the Owner, shall have the right to assign this Agreement to any party designated by the Owner ("Subcontract Assignee"), and upon and after any such assignment Subcontractor shall render full performance hereof to such Subcontract Assignee and such Subcontract Assignee shall succeed to all of the Construction Manager's rights hereunder and shall perform all of the Construction Manager's obligations hereunder arising from and after such assignment. Upon an assignment of this Agreement by the Owner, the Owner shall be deemed released from any and all liability under this Agreement provided that the assignee thereunder is acceptable to the Subcontractor, in the exercise of its reasonable judgment.

With respect to the Work to be performed and furnished by the Subcontractor hereunder, the Subcontractor agrees to be bound to the Construction Manager by each and all of the terms and provisions of the Construction Management Agreement and the other Contract Documents, and to assume toward the Construction Manager all of the duties, obligations and responsibilities that the Construction Manager by the Construction Management Agreement and those other Contract Documents assumes toward the Owner, and the Subcontractor agrees further that the Construction Manager shall have the same rights and remedies as against the Subcontractor as the Owner under the terms and provisions of the Construction Management Agreement and the other Contract Documents has against the Construction Manager with the same force and effect as though every such duty, obligation, responsibility, right or remedy were set forth herein in full.

The Construction Management Agreement shall continue to be a Contract Document and incorporated herein and a part hereof, and Subcontractor shall continue to be bound by the Construction Management Agreement, as provided in the immediately preceding paragraph, notwithstanding any termination, expiration or cancellation of the Construction Management Agreement, or the assignment or reassignment of the Construction Management Agreement by the Construction Manager or the Owner.

8.2.8 Every Subcontractor shall be required to include the language contained in Section 8.2.7 in each and every sub-subcontract and/or agreement with a material supplier that relate to such Subcontractor's performance of any portion of the Work, except that references in the language required pursuant such Section 8.2.7 to the Construction Manager shall be references to the Subcontractor, and references to the Subcontractor shall be references to such sub-subcontractor or material supplier. Every sub-subcontractor and material supplier shall be required to include a corresponding provision in every lower tier sub-subcontract or agreement with a material supplier.

8.2.9 Every Subcontractor shall be required to include a provision stating that Subcontractor shall prepare and submit to the Construction Manager, As-Built Drawings on CADD Disks, including 3D modeling (as applicable), pursuant to the requirements set forth in Section 9.1.

8.2.10 Upon demand by the Owner, the Construction Manager shall assign any one or more Subcontracts to the Owner, provided however, that the Construction Manager shall not be required to assign such Subcontracts in the event the assignment is requested in bad faith in order to reduce the Construction Manager's compensation under this Agreement.

8.2.11 The Construction Manager shall make available for review by each proposed Subcontractor, prior to the execution of the Subcontract, this Agreement (redacted as requested by the Owner or the Owner's Representative or as the Construction Manager otherwise deems appropriate), and those Drawings and Specifications pertinent to its scope of work. The Construction Manager shall require each Subcontractor to similarly make available for review by their respective sub-subcontractors and proposed sub-subcontractors applicable portions of such documents.

8.2.12 All Subcontracts (and sub-subcontracts) shall be submitted to the Owner prior to being executed by the Construction Manager or the Subcontractor. The Owner shall have the right, but not the obligation, to review and approve all Subcontract and sub-subcontract scopes of work, and all Subcontracts and sub-subcontracts prior to execution thereof. Neither the submission of a Subcontract or sub-subcontract to the Owner, nor the review or approval of a Subcontract or sub-subcontract by the Owner, shall be deemed to (a) relieve the Construction Manager of its duty of due diligence in selecting a Subcontractor, (b) relieve the Construction Manager from any of its obligations under this Agreement, (c) establish privity of contract between the Owner and any Subcontractor or otherwise create any rights in favor of any Subcontractor as against the Owner, (d) impose on the Owner any liability arising from, or in connection with, such Subcontracts or sub-subcontracts, or (d) make the Owner responsible for a Subcontractor's or sub-subcontractor's performance or failure to perform.

8.2.13 The Construction Manager shall execute Subcontracts in the Construction Manager's own name and on its own behalf and not as agent for the Owner. The Construction Manager shall furnish the Owner with a duplicate original of each fully executed Subcontract promptly after its execution and prior to the Subcontractor thereunder commencing performance of the portion of the Work contemplated thereby.

8.2.14 Any Subcontractor responsible for performing professional design services, as may be required by the Specifications, shall be required to provide proof of professional liability insurance covering the negligent or allegedly negligent acts, errors or omissions of such Subcontractor and its design professionals, with coverage limits of at least \$2,000,000 per claim and \$5,000,000 in the aggregate on an annual basis, except as otherwise agreed to by the Owner. Any such Subcontractor shall be required to maintain such coverage for a period of at least three (3) years from the completion of its Subcontract.

8.3 Termination of a Subcontract

8.3.1 The Construction Manager shall not terminate a Subcontract or replace a Subcontractor without the prior written approval of the Owner, which shall not be unreasonably withheld.

8.3.2 The Owner shall have the right to request termination of any Subcontract upon the occurrence of a default by the Subcontractor thereunder, provided that the Owner can demonstrate a good faith basis for its belief that such default has occurred. Upon the Owner's request for such termination of a Subcontract for cause, the Owner and the Construction Manager shall meet within one (1) business day to discuss, in good faith, whether such termination of the Subcontractor is warranted and/or whether the notification required pursuant to Section 11.5.2 is warranted. In addition, the Owner shall have the right to request termination of any Subcontract for convenience (i.e., for any reason or for no reason at all). In the event of any request for termination by the Owner under this Section 8.3.2, the Construction Manager shall terminate such Subcontract upon receipt of such request for termination or as soon as practicable given the circumstances at the time of such request for termination but in such instance no longer than three (3) days after receipt of such request for termination. In the event of a Subcontractor's termination at the request of the Owner for convenience, the Owner shall pay for the reasonable and actual costs incurred by the Construction Manager relating to such termination, provided, however, that the Owner shall not be responsible to pay any termination or "breakup" fees. Subject to the limitations of Section 10.7, the Construction Manager shall also be entitled to an extension of the Project Schedule for any delays resulting from a termination of a Subcontractor for the Owner's convenience. In the event of any termination of any Subcontract, the terminated Subcontractor shall not be entitled to anticipated or lost profits or overhead as a result of such termination.

8.4 Disputes between Subcontractors

8.4.1 The Construction Manager shall resolve all disputes between the Subcontractors relating to the performance of their Work or the furnishing of materials, supplies or equipment in connection with the Work, without interruption or delay to the Project, and have all Subcontractors agree to continue performance of their work notwithstanding any such dispute.

8.5 Construction Manager's Responsibility

8.5.1 The Construction Manager shall be responsible to the Owner for the acts and omissions of its agents and employees and all Subcontractors, and their respective agents and employees.

ARTICLE 9 - PROJECT DOCUMENTS

9.1 As-built Drawings

9.1.1 The Construction Manager shall cause each Subcontractor to prepare, from time to time or as otherwise required by the Owner, As-Built Drawings of its Work on CADD Disks, using 3D modeling (as applicable), which "as-built" drawings shall record (i) approved changes to the Drawings and to the Work, whether accomplished by Change Orders, Field Proceed Orders, or otherwise, and (ii) the exact locations of all concealed Work and the size, routing and elevation thereof. The Construction Manager shall compile, review, upgrade, and conform such "as-built" drawings of the Work on CADD Disks, including using 3D modeling (as applicable), which include all of the Subcontractors' As-built Drawings. The Construction Manager shall, at all times, maintain a current set of such drawings.

9.2 Project Documents

9.2.1 In addition to the requirements imposed by Applicable Laws and Specifications, the Construction Manager shall maintain at the Project Site a complete and updated set of the Project Documents.

9.3 Ownership and Use of Project Documents

9.3.1 The Construction Manager shall and does hereby assign, and shall cause each Subcontractor to assign, to the Owner all of the respective right, title and interest of the Construction Manager and such Subcontractor, if any, in, to and under any and all Project Documents, including all trademarks, copyright privileges and other tangible and intangible rights attaching thereto. The Construction Manager shall deliver the Project Documents to the Owner, from time to time, as required under this Agreement or as otherwise required by the Owner or, if not delivered prior to Final Completion of the Project, then upon such Final Completion and as a condition to Final Payment. The Project Documents shall be delivered to the Owner in the same manner as close-out documents are required to be delivered under this Agreement. The Construction Manager shall also execute, and cause all Subcontractors to execute, any and all documents and releases, and take all actions necessary, or otherwise required by the Owner, to establish, document and protect the right, title and interest of the Owner in the Project Documents, including, if requested by the Owner, an assignment of all copyrights and copyright privileges. The Construction Manager may retain copies of the Project Documents for its files. The Owner shall have the right to use the Project Documents for the completion of the Services or the Work by others.

ARTICLE 10 - PROJECT SCHEDULE

10.1 Project Schedule

10.1.1 The Project Schedule shall be produced using software in “CPM” format with monthly updates in “.prx” format, “.pdf” format, and in hard copy, and shall set forth the Milestone Events, including the Substantial Completion Date. The Project Schedule shall fully describe the intended method of accomplishing all the various portions of the Work and related activities necessary to complete the Work. The Project Schedule shall demonstrate, to the reasonable satisfaction of the Owner, an expeditious, practicable and reasonable plan for achieving the Milestone Events, including the Substantial Completion of the Work. In no event shall the Project Schedule contain any extension of a Milestone Event or any other revisions which would result in any Milestone Event not being achieved, without in either such instance obtaining the prior written consent of the Owner to such extension or other revision.

10.1.2 The Project Schedule shall indicate the Milestone Events, durations and sequencing of all activities of the Work and show the integration with the Work of the Project activities of the Owner, the Owner’s Representative, the Design Professionals and the Separate Contractors, including, as appropriate:

- a. Permit and approval process.
- b. Verification of the assumptions in the Budget relative to the intended schedule.
- c. Dates for the receipt of design deliverables from the Design Professionals required for subcontracting and procurement including sufficient time for the review and approval by the Owner of the design documents and the subcontract bid packages.

- d. Activities related to the procurement of Subcontractors.
- e. A purchasing schedule including a listing of all long-lead material, building systems and equipment items and a schedule for the acquisition and delivery of such items.
- f. A schedule for the engineering, Submittals submission, fabrication, testing, and delivery of all major components fabricated off-site.
- g. One or more “critical paths”.
- h. Activities for coordination of the Work with the work of Separate Contractors, as applicable.
- i. Construction completion and closeout activities including appropriate time for Punch List completion.
- j. Activities related to approvals required to be obtained from Governmental Authorities.
- k. Activities of the Design Professionals necessary for mock-up construction.
- l. Commissioning activities including dates for commencement and completion of startup, testing, and commissioning of equipment and systems.

10.1.3 The Project Schedule shall indicate specific activities, durations, dependencies and sequencing and provide a critical path through the activities including identification of the Milestone Events. To the extent required, the Project Schedule shall provide for phasing of the various activities as may be required to achieve the Owner’s use or occupancy requirements.

10.1.4 The Project Schedule shall contain dates for achievement of the various elements of the Work that would enable the Construction Manager to achieve all of the Milestone Events.

10.1.5 The Construction Manager shall prepare detailed trade-by-trade critical-path-method schedules for each Subcontract, providing for all purchasing, engineering, submittal, fabrication, delivery, construction, testing, commissioning and close-out activities. The Project Schedule shall be broken down into Subcontract Schedules and the Project Schedule and Subcontract Schedules shall include identification of critical-path activities and early-start, late-start and finish dates. All Subcontract Schedules shall be integrated into the Project Schedule.

10.1.6 For critical, highly complex items of work or for such other elements of the Work as the Owner may specify, the Construction Manager may be required to prepare additional, more detailed schedules consistent with the Project Schedule. The format and content of these schedules will be mutually agreed upon by the Construction Manager and the Owner.

10.1.7 The Construction Manager shall keep the Owner, the Owner’s Representative, the Design Professionals and all of the Subcontractors fully and completely informed at all times of the content of the Project Schedule, other relevant schedules and all other scheduling information applicable to or which may affect the work of the Subcontractors. This information shall in all cases be furnished to the Subcontractors in sufficient time to allow them to adjust their plans so as to meet all required performance dates relative to their portions of the Work. The Owner and the Design Professionals shall be entitled to rely fully on the content of the Project Schedule in planning and

scheduling performance of their obligations under the Contract Documents or of interrelated work by their own forces or Separate Contractors. At least once a month, or at other intervals required by the Owner, the Construction Manager shall advise the Owner of the status of the Work on marked copies of the then current Project Schedule. If any of the Work is not on schedule as set forth in the Project Schedule, the Construction Manager shall immediately advise the Owner in writing of a proposed action to bring the Work back on schedule.

10.1.8 The Construction Manager shall submit immediate reports of any delay in the Work, which reports shall identify the cause for the delay, the estimated duration and cost of the delay, and a specific remedy of the delay. To the extent possible, notifications shall be submitted to the Owner in advance of the anticipated delay to allow for all reasonable action on behalf of all involved parties to achieve a resolution minimizing schedule or cost impact.

10.1.9 The Construction Manager shall submit monthly an updated Project Schedule to the Owner with each Monthly Report, which shall include, at the minimum:

- a. actual versus baseline percent completion for each portion of the Project and the entire Project;
- b. actual versus baseline Work in place for the entire Project; and
- c. any change in any critical path.

10.2 Time is of the Essence for Performance of the Work.

10.2.1 The Construction Manager shall perform, and cause to be performed, the Work in compliance with the Project Schedule. Time shall be of the essence for all Milestone Events shown on the Project Schedule and all other dates and deadlines provided for in this Agreement with respect to the performance of the Work.

10.2.2 The Construction Manager shall perform the Work, and cause the Work to be performed, in a diligent manner and shall perform and cause to be performed the several parts thereof at such times and in such order as the Owner may direct. The Construction Manager shall maintain, and cause to be maintained, the progress of the Work so as to achieve Substantial Completion of the Project by the Substantial Completion Date and the other Milestone Events.

10.2.3 The Construction Manager shall arrange to have materials and products manufactured and available in a timely manner such that neither commencement nor performance of the Work will be delayed.

10.2.4 The Construction Manager shall provide, and cause to be provided, an adequate workforce and sufficient equipment, materials, tools and supplies so that the Work is performed in compliance with the Project Schedule. The Construction Manager shall perform the Work, and cause the Work to be performed, during normal working hours except as may be provided otherwise in the Contract Documents. If any critical path element of the Work (including any Milestone Event) is not achieved by its corresponding critical path date, or the Owner believes, in the exercise of its reasonable judgment, that any critical path element of the Work will not be achieved by its corresponding critical path date due to the fault, act or omission of the Construction Manager or any Subcontractor, then, upon written notice from the Owner, the Construction Manager shall cause its employees and Subcontractors, at its own expense, to perform and work at hours and on days, in addition to the normal working hours and normal working days, whatever overtime work or shift work is necessary to return such critical path

elements of the Work to being in compliance with the Project Schedule. To the extent that the Construction Manager is unable to obtain any permits or approvals required for overtime work from Governmental Authorities, or the Owner is unable to obtain any required consent of a tenant to perform overtime work, it shall revise its means and methods of construction, including increasing the amount of labor and equipment, in order to achieve such compliance. If the Construction Manager fails to take prompt and adequate corrective action to bring the Work back on schedule to the satisfaction of the Owner, the Owner reserves the right, on seven (7) days notice to the Construction Manager, to perform such Work as it deems necessary and to backcharge the cost thereof against payments due to the Construction Manager under this Agreement.

10.3 Separate Contractors

10.3.1 The Construction Manager shall not cause any unnecessary hindrance or delay to the progress of the work being performed by Separate Contractors. If any Separate Contractor sustains any damage through any act or omission of the Construction Manager, the Construction Manager shall reimburse such Separate Contractor, on demand, for all such damages and shall indemnify and hold harmless the Owner from any Losses incurred by the Owner by reason of such damage. The Owner shall use commercially reasonable efforts to include a provision similar to this Section 10.3.1 in agreements entered into with Separate Contractors

10.4 Substantial Completion

10.4.1 Substantial Completion is that point in the progress of the Work when (a) the Work or designated portion thereof, as certified by the Owner's Representative, is sufficiently complete in accordance with the Contract Documents, with all needed systems and equipment operational, to enable the Owner or its Affiliates, or the public, as appropriate, to use and occupy the Project Site or the agreed, defined portion of the Project Site, for its intended use as set forth in the Contract Documents, and (i) after completion of the items identified in the lists prepared pursuant to Section 10.4.3, only minor finish punch list items or similar minor corrective work remains to be completed that do not adversely affect the capability of the Project Site or the designated portion thereof to operate and function safely in the ordinary course of business; (ii) a temporary certificate of occupancy ("TCO") has been issued, (iii) the commercial units are in rentable condition, and (iv) all Tenant Turnover Requirements, attached hereto as Exhibit CC, have been achieved; and (b) all Certificates shall have been issued. To the extent that the Construction Manager is unable to obtain a TCO or a Certificate shall have not been issued to due to reasons beyond the Construction Manager's control and at no fault of Construction Manager, including delays caused by City of Los Angeles Department of Building and Safety (LADBS) or other Governmental Authorities or if the Owner fails to provide the necessary information to DOB, which is preventing the DOB from issuing a TCO, but the Construction Manager has complied with all of its other obligations set forth in this Section 10.4 and to the extent that such delays in issuing the TCO are beyond normal delays, Construction Manager shall have deemed to complied with Section 10.4, provided that it shall continue to assist the Owner with the procurement of a TCO.

10.4.2 The Construction Manager shall arrange for and manage building department inspections and applications and cooperate with the Owner, as necessary, to procure the Certificates and shall thereafter procure and deliver the same to the Owner, if required by the Owner, provided however, that if the Owner shall have retained a separate consultant to procure the Certificates and the Construction Manager has provided all necessary and required information to the Owner's consultant, then the Construction Manager shall not be responsible for procuring the same but shall submit to such consultant all documents and information necessary to enable the consultant to procure the Certificates and shall otherwise cooperate with and assist the Owner in connection with such procurement.

10.4.3 When the Construction Manager considers that the Work, or a portion thereof which the Owner agrees to accept separately, has achieved Substantial Completion, the Construction Manager shall prepare and submit to the Owner and the Design Professional a comprehensive list of items to be completed or corrected and the timeframe for such completion or correction. The Construction Manager shall proceed promptly to complete and correct the items on such list. Upon completion by the Construction Manager of the items set forth on such list, the Owner, within a reasonable period of time not to exceed fourteen (14) days, shall inspect the Work, or portion thereof, and, if necessary, prepare a list of items to be completed or corrected and the timeframe for such completion or correction. The Construction Manager shall proceed promptly to complete and correct the items on such list. Failure to include an item on either such list does not alter the responsibility of the Construction Manager to complete all Work in accordance with the Contract Documents. Upon notice from the Construction Manager that it has completed or corrected the items contained on the Owner's list, the Design Professional will make an inspection to determine whether the Work or designated portion thereof has achieved Substantial Completion. If such inspection discloses any item other than minor punch list or corrective work, whether or not included on the Construction Manager's list, which is incomplete or not in accordance with the requirements of the Contract Documents, the Construction Manager shall, as a condition to the issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Design Professional. The Construction Manager shall then submit a request for another inspection by the Design Professional, to determine whether Substantial Completion shall have occurred. Only two such inspections shall be made at the Owner's cost. The cost of all subsequent inspections requested by the Construction Manager shall be paid by the Construction Manager, at its sole cost and expense.

10.4.4 When the Work or designated portion thereof shall have achieved Substantial Completion and the Owner has so concurred, the Architect will issue a Certificate of Substantial Completion and the Punch List. The Construction Manager shall (a) review the Punch List with the Owner's Representative and the Architect; (b) schedule, coordinate, and perform or cause to be performed the prompt correction and completion of the items on the Punch List; and (c) institute a comprehensive and detailed Punch List management system that includes repetitive follow-up with all Subcontractors, the Architect and others as required until the Owner has accepted the correction of each deficient item on the Punch List. Punch List tracking documents shall be issued on a regular basis no less frequently than once a week. The Construction Manager shall perform all Punch List work at such times and in such a manner so as to not unreasonably interfere with the use or occupancy of the Project Site.

10.4.5 Until Substantial Completion of the Work, and to the extent stated in the Contract Documents, the Construction Manager shall be responsible for security, maintenance, heat, utilities, damage to the Work and insurance. The Certificate of Substantial Completion shall be submitted to the Owner and the Construction Manager for their written acceptance of responsibilities assigned to them in such Certificate of Substantial Completion. The Construction Manager's failure to accept any such responsibilities shall not alter the obligation of the Construction Manager to cause all Work to be completed in accordance with the Contract Documents.

10.4.6 The Owner or its Affiliates may occupy or use any completed or partially completed portion of the Project Site, provided that the Construction Manager shall be granted access so that it can prosecute its Work. Such partial occupancy or use may commence whether or not the portion is Substantially Complete. Immediately prior to such partial occupancy or use, the Owner and the Construction Manager shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

10.4.7 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

10.5 Final Completion

10.5.1 Within sixty (60) days of the date of this Agreement, the Construction Manager shall provide a projected Closeout Schedule and Procedures to the Owner, indicating the anticipated order, requirements and documentation necessary for closing out each Subcontract, for the Owner's review and approval. Upon such approval, the Closeout Schedule and Procedures will be attached hereto as Exhibit W.

10.5.2 As the Work nears completion, the Construction Manager shall:

a. Work with the Owner, the Owner's Representative and the Architect to ensure orderly closeout of all Subcontracts and transition from construction to use and occupancy, including providing a schedule for the closeout of all Subcontractors to the Owner.

b. Assemble and provide all final documentation as required by the Contract Documents and Subcontracts, including Subcontractors' As-built Drawings, Composite As-built Drawings and the other Project Documents, Certificates, Permits, maintenance and operation manuals, warranties, guarantees, certifications, affidavits, testing reports, maintenance stock, spare parts and keys.

c. Compile a detailed summary of all project expenditures for the Owner's information and use, and assist in fulfilling all audit and certification requirements.

d. Provide final closeout paperwork on each Subcontractor including preparing, in consultation with the Owner, the Owner's Representative and the Architect, a list of all incomplete documentation required for final payment, and recommend and process final payments.

e. If desired by the Owner, assist the Owner in achieving a phased occupancy of the Project.

10.5.3 Final Completion of the Work shall be deemed to have occurred when all of the following shall have been achieved, as memorialized by the issuance of the Certificate of Final Completion: (i) the Construction Manager shall have completed all of the Work in accordance with the Contract Documents to the satisfaction of the Owner; (ii) the satisfactory operation of all equipment, by means of acceptance tests; (iii) completion or correction, as the case may be, of all Punch List items to the satisfaction of the Architect and the Owner's Representative; (iv) release of all mechanics', materialmen's and similar liens, or provision of adequate security, as determined by the Owner in its sole discretion, against such liens; (v) delivery of all warranties and guarantees, air balance reports, equipment operation and maintenance manuals, Subcontractors' As-Built Drawings and Composite As-built Drawings; (vi) removal of all rubbish, tools, scaffolding and surplus materials and equipment from the Project Site, (vii) delivery of the Construction Manager's Final Affidavit and Release of Claims; and (viii) delivery of the Subcontractor's Final Affidavit and Release of Claims executed by all Subcontractors and any person who has filed a lien against the Project Site and with respect to which the Construction Manager has not provided adequate security as required by Section 10.5.3(iv). To the extent that the Construction Manager is unable to obtain a permanent certificate of occupancy ("CO") due to delays by the DOB or other Government Authorities or if the Owner fails to provide necessary information to DOB, which is preventing DOB from issuing a CO, but the Construction Manager has complied with all of its other obligations set forth in this Section 10.5 and to the extent that such delays

in issuing the TCO are beyond normal delays, Construction Manager shall be deemed to have complied with this Section 10.5, provided that it shall continue to assist the Owner with the procurement of a permanent certificate of occupancy

10.5.4 The Construction Manager shall request of the Owner a determination of Final Completion and provide written notice to the Owner that the Work is fully completed and ready for final inspection. Upon receipt by the Owner of such request and notice, the Owner will instruct the Architect and/or the Owner's Representative to promptly make such inspection and, when the Architect and/or the Owner's Representative find that all of the events constituting Final Completion shall have been achieved, the Architect and/or the Owner's Representative will promptly notify the Owner and issue the Certificate of Final Completion.

10.6 Assisting Facilities Manager

10.6.1 The Construction Manager shall provide appropriate support and assistance to, and cooperate and coordinate with, the facilities manager for initial operating services at the Project.

10.7 Unavoidable Delays

10.7.1 If an Unavoidable Delay results from one of the following Unavoidable Delay Events:

- a. abnormal inclement weather, subject, however, to the terms and conditions set forth in clause (e) of this Section 10.7.1;
- b. acts of terrorists, war or national conflicts or priorities arising therefrom;
- c. strikes, boycotts or work stoppages not caused by the Construction Manager or its Subcontractors;
- d. fire or other casualty not caused by the negligence or willful misconduct of the Construction Manager or any Subcontractor or any of their respective agents, employees or representatives;
- e. suspension of the Work in accordance with Section 20.1 of this Agreement;
- f. embargoes or interdictions of any kind, moratoriums, orders or instructions of any Governmental Authority, except for orders or instructions which are issued by construction officials as part of the usual regulatory procedures governing the Project, government allocations or priorities and requirements or demands of the national defense and/or homeland security programs; or
- g. acts, omissions or willful misconduct of the Owner's agents, Affiliates, Design Professionals and Separate Contractors;
- h. willful misconduct of the Owner; or
- i. other causes beyond the Construction Manager's reasonable control where the Construction Manager is unable to access the Project Site

then, subject to Section 10.7.2 the applicable Milestone Event shall be extended for a period equal to the length of time that achievement of such Milestone Event will be delayed by reason

of such Unavoidable Delay Event, provided that within ten (10) days after the initial occurrence of the applicable Unavoidable Delay Event, the Construction Manager sends a notice to the Owner requesting a time extension by reason of such Unavoidable Delay Event and explaining the cause and duration of the Unavoidable Delay, and provided, further, that the Construction Manager demonstrates to the Owner the amount of time past the applicable Milestone Event that achievement of the Milestone Event will be delayed by reason of such Unavoidable Delay Event and that such delay was caused specifically by such Unavoidable Delay Event.

10.7.2 Notwithstanding anything to the contrary in Section 10.7.1, no extension of time shall be granted by reason of an Unavoidable Delay Event if and to the extent that the Construction Manager could have avoided or mitigated the resulting delay, provided that the Owner shall have authorized or approved the expenditure of funds by the Construction Manager in connection with its efforts to so avoid or mitigate such delay, in which event the Construction Manager shall be entitled to draw such funds from the Contingency, provided however, that the Construction Manager shall not be required to spend Contingency in connection with its efforts to avoid or mitigate the Unavoidable Delays set forth in Section 10.7.1 (g)-(i). With respect to Unavoidable Delays set forth in Section 10.7.1 (g)-(i), the Construction Manager shall be entitled to a Change Order for costs incurred in connection with its efforts to avoid or mitigate such delays. If the Construction Manager could not have avoided or mitigated the resulting delay, or if the Construction Manager could have avoided or mitigated such delay but the Owner did not authorize or approve the expenditure of funds by the Construction Manager as provided herein, then the Construction Manager's sole and exclusive remedy shall be to (i) request an extension of time in the manner and within the time frame provided in, and subject to the terms of this Section 10.7, and (ii) receive, if applicable and subject to Section 10.7.3, only its actual Cost of the Work, if any, incurred by reason of such Unavoidable Delay Event. The Construction Manager shall in no event be entitled to any claim for damages whatsoever by reason of any such Unavoidable Delay Event, including so-called "Eichleay damages."

10.7.3 Notwithstanding anything to the contrary in the Contract Documents, the Construction Manager agrees that it shall not be entitled to receive any additional compensation for Cost of the Work due to or caused by any Unavoidable Delays that, in the aggregate, total less than sixteen (16) Work Days. In the event such Unavoidable Delays exceed fifteen (15) Work Days, the Construction Manager shall be entitled to receive the actual, demonstrated increases in the Cost of the Work attributable to such delay, but only with respect to the portion of such delay that exceeds such fifteen (15) Work Days. Notwithstanding anything to the contrary herein, the Construction Manager may be entitled to receive payment for General Conditions Costs incurred during such fifteen (15) Work Days subject to the limitation on General Conditions Costs set forth in Section 15.6.1(c).

10.7.4 Notwithstanding anything to the contrary in the Contract Documents, the Construction Manager shall not be entitled to receive any additional compensation or extension of time for an Unavoidable Delay to the extent such delay occurs concurrently with delay due to or caused by the Construction Manager.

10.7.5 In the case of a continuing Unavoidable Delay Event, the Construction Manager shall be required to make only one request for a time extension with respect thereto.

10.7.6 The Construction Manager shall not be entitled to any extension of time due to incompleteness or lack of coordination of Drawings or Specifications.

10.7.7 The term "abnormal inclement weather," as used in Section 10.7.1(a), shall mean that the actual number of days of inclement weather during the period in which the Work shall have been performed exceeded the normal number of days of inclement weather for such period as determined by

employing a ten year average of accumulated record mean values from climatological data compiled by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration for the area closest to the Project Site.

10.8 Liquidated Damages

10.8.1 The Owner and the Construction Manager recognize that the damages to the Owner which would result from the Construction Manager's failure to achieve completion of any of the applicable Milestone Events are uncertain and cannot be calculated exactly and have agreed that if the Construction Manager shall have failed to achieve any Milestone Event, the Construction Manager shall pay to the Owner, as liquidated damages and not as a penalty, with respect to each Milestone Event, the applicable Liquidated Damages. The Owner shall have the right to withhold from any sums due to the Construction Manager under this Agreement the amount of Liquidated Damages then due to the Owner, and apply the same towards payment of such Liquidated Damages. In the event of any termination of this Agreement prior to completion of the Project, Liquidated Damages shall apply notwithstanding such termination, provided and to the extent that the Construction Manager's actions or inactions caused delay in achieving any Milestone Event.

10.8.2 The parties further acknowledge that the amount of Liquidated Damages provided for in Section 10.8.1 hereof represents fair and reasonable consideration under the circumstances existing as of the date of this Agreement, and shall be capped at fifty (50%) percent of the Fee earned by the Construction Manager, and that such sum represents the parties' best estimate as of the date hereof of the Owner's damages for delay in the event of the Construction Manager's failure to achieve any Milestone Event.

10.8.3 The parties acknowledge and agree that the Liquidated Damages provided for in Section 10.8.1 relate only to damages to the Owner caused by the Construction Manager's delay in achieving any Milestone Event, and such Liquidated Damages are not intended to, and shall not, limit the Owner's recovery from the Construction Manager under the terms of this Agreement for any direct damages caused by or resulting from the performance of the Work by the Construction Manager or any Subcontractors. Notwithstanding anything to the contrary herein, (i) the Liquidated Damages shall be the Owner's sole remedy for the Construction Manager's failure to meet any Milestone Date, and (ii) in no event shall the Construction Manager be permitted to use Contingency to pay for any Liquidated Damages assessed under this Agreement.

10.8.4 If the Owner determines, in its sole good faith judgment based upon a review of the then current Project Schedule and the most recent reports issued pursuant to Article 5 of this Agreement, that the Construction Manager will not achieve any of the Milestone Events, the Owner may withhold from any payments due to the Construction Manager under this Agreement an amount equal to the aggregate Liquidated Damages that the Owner anticipates will become due under Section 10.8.1 hereof, by reason of the projected late achievement of such Milestone Event. In the event the Owner exercises this right, the Owner shall draw funds first from the Construction Manager's Fee and if necessary, then from the General Conditions, but not to exceed the cap set forth in Section 10.8.2. Once such Milestone Event shall have been achieved, the Owner shall reconcile the actual amount of Liquidated Damages due, if any, with the amount withheld by the Owner on account of the foregoing anticipated Liquidated Damages, and the difference, if any, shall be accounted for in the next payment due to the Construction Manager hereunder.

ARTICLE 11 - WARRANTY; GUARANTY; BONDS

11.1 Warranty

11.1.1 The Construction Manager warrants that:

a. the Work shall be performed in a good and workmanlike manner, in conformity with the Contract Documents and consistent with the Standard of Care, and shall be of first-class quality and workmanship, free of any faults or defects in equipment, material, or design furnished, or workmanship performed by the Construction Manager, or any Subcontractor, supplier or manufacturer retained by the Construction Manager for purposes of performing the Work; and

b. The materials and equipment provided in support of the Work performed are new unless otherwise specified in the Contract Documents.

11.1.2 The warranties described in this Section 11.1 shall not be construed to modify or limit, in any way, any rights or actions which the Owner may otherwise have against the Construction Manager, at law or in equity.

11.2 Guaranty

11.2.1 If, within the Guaranty Period, any of the Work is found to be damaged, defective or at variance with the Contract Documents, the Construction Manager shall repair or replace such Work at its sole cost and expense. The Construction Manager shall make or commence to make, within seven (7) days of its receipt of notice from the Owner during the Guaranty Period, any and all repairs or replacements of such Work, and shall repair and replace, at its sole cost and expense, any and all damage caused by such repair or replacements, to the satisfaction of the Owner. If the Owner determines that an emergency exists which requires more immediate action than the Construction Manager is able to provide, the Owner may perform or cause to be performed such repairs or replacements, provided that it shall notify the Construction Manager of such emergency as soon as reasonably practicable, in which event the Construction Manager shall compensate the Owner for the cost thereof, on demand. Any repairs or replacements that the Construction Manager is required to make pursuant to this Section 11.2.1 shall be prosecuted to completion by the Construction Manager even if such repairs or replacements may not be completed until after the expiration of the Guaranty Period. The Guaranty Period shall be deemed extended for any repair or replacement of a component to the date which is one (1) year from the final acceptance of such repair or replacement. The obligations of the Construction Manager to make repairs or replacements under this Section 11.2.1 shall not be satisfied, unless the Owner so elects in writing, by the payment of money to the Owner. If the Owner determines, in its reasonable discretion, that any materials or equipment installed as part of the Work are inherently defective, thus being incapable of repair, then the Construction Manager shall, upon notification by the Owner of such determination, furnish and install a replacement for such materials or equipment. The Owner may, if it so elects, specify the manufacturer and the trade name or model number of the replacement for such materials or equipment provided the replacement is of similar quality as the original materials or equipment. In the event that the Construction Manager fails to comply with any of the provisions of this Section 11.2.1, the Owner may, in addition to exercising all other legal and equitable remedies it may have, (1) deduct from any payment due or thereafter to become due to the Construction Manager under this Agreement, the amount of damage, cost or expense that has been or, as reasonably estimated by the Owner, may be incurred by the Owner due to such failure by the Construction Manager, and (2) perform or cause to be performed any needed repairs and replacements, in which event the Construction Manager shall compensate the Owner for the cost thereof, on demand. The Construction Manager hereby expressly waives all claims that its guaranty or

any of its warranties were impaired due to any corrective work performed by, or at the direction of, the Owner as a result of the Construction Manager's refusal to comply with its Guaranty obligations. This Section 11.2.1 shall survive Final Completion of the Project or the expiration or earlier termination of this Agreement.

11.3 Subcontractors' Guarantees and Warranties

11.3.1 The Construction Manager shall obtain from the Subcontractors (excluding those Subcontractors which have only supplied materials and equipment and not installed the same) and deliver to the Owner four copies of notarized warranties in the form attached hereto as Exhibit X for the Work performed under each section of the Specifications. The Construction Manager shall submit all of the warranties to the Owner and the Architect as a prerequisite to Final Payment. The period for such warranties shall not commence until the applicable Subcontract for such warranted Work is closed out by the Construction Manager and the Owner pursuant to the requirements of this Agreement.

11.3.2 In addition to procuring the warranties required pursuant to Section 11.3.1 hereof, the Construction Manager shall arrange for the inclusion of the following provision in every Subcontract, agreement and purchase order relating to the purchase by the Construction Manager or Subcontractors of Merchandise to be installed or incorporated by the Construction Manager or the Subcontractors as part of the Work:

"The supplier expressly agrees that each of _____ (together, the "Owner") **[add name of Construction Manager if agreement or purchase order is between the supplier and a Subcontractor]** shall each be a third-party beneficiary of all of the obligations of the supplier hereunder, including without limitation, the beneficiary of all warranties, expressed or implied, and guarantees which the supplier makes herein relating to materials, equipment, goods, merchandise or products (collectively, "Merchandise") to be sold hereunder by the supplier. Nothing herein shall be construed to make this an agreement between the Owner **[or the Construction Manager]** and the supplier except to the extent provided in the immediately preceding sentence and the supplier acknowledges that it has no contractual rights, expressed or implied, which it can assert against the Owner **[or the Construction Manager]**. Without limiting in any manner any obligations of the supplier with respect to the quality of the Merchandise or any other warranty or guaranty provided by the supplier, the supplier expressly warrants and agrees that the Merchandise to be furnished hereunder shall be merchantable and shall be fit for the purpose for which such Merchandise is purchased."

11.3.3 At the Owner's election, the Construction Manager shall either enforce, on the Owner's behalf, the guarantees and warranties described in Sections 11.1 and 11.2 hereof, or assist the Owner in the enforcement thereof.

11.4 Owner's Rights

11.4.1 The warranties and guaranties provided for in this Article 11 and elsewhere in the Contract Documents shall be for the benefit of, and enforceable by, the Owner, and shall be in addition to and not a limitation of any rights the Owner may have under the terms of the Contract Documents, or which may otherwise be available at law or in equity.

11.5 Bonds/Subcontractor Default Insurance

11.5.1 If required by the Owner, the Construction Manager shall provide payment and performance bonds for the value of the Cost of the Work, or, at the Owner's option, with respect to select Subcontracts as determined by the Owner. Such bonds shall name the Owner, and any other entity reasonably requested by the Owner, as an obligee and shall be in form and issued by sureties reasonably acceptable to the Owner. As an alternative to payment and performance bonds, at the Owner's request, the Construction Manager shall obtain subcontractor default insurance ("Subcontractor Default Insurance"), relative to the Work, in form and amount satisfactory to the Owner, and including a financial endorsement in favor of the Owner. All Subcontracts, shall be subject to and enrolled in the Construction Manager's Subcontractor Default Insurance program. Any Subcontractor excluded from Subcontractor Default Insurance will be required to provide payment and performance bonds. The costs of payment and performance bonds and Subcontractor Default Insurance, as applicable, shall not be included in the General Conditions Costs, it being the intent of the parties that no Base Fee shall be payable to the Construction Manager with respect thereto.

11.5.2 In the event that the Owner can demonstrate a good faith basis to require the default and/or termination of a particular Subcontractor, the Owner may demand the Construction Manager to notify such Subcontractor and its Subcontractor Default Insurance carrier of such default. The Owner and the Construction Manager agree that, without limiting the generality of the foregoing, a failure by any Subcontractor to remedy defective or nonconforming work, as contemplated by Section 4.11.2 of this Agreement, having a value of ten (10%) of the subcontract value or greater shall constitute such good faith basis. Except where prohibited by the terms of its Subcontractor Default Insurance policy, the Construction Manager agrees to comply with the Owner's demand and shall take all actions necessary to pursue a claim under the Subcontractor Default Insurance program. In negotiating the terms of its Subcontractor Default Insurance policy, the Construction Manager shall use best efforts to include the Owner's right to default or terminate a Subcontractor within the terms of such policy. In the event that the Construction Manager disagrees with the Owner's determination to require such default and/or termination, the Construction Manager must still comply with the terms of this Section 11.5.2; however, if it is determined by a court of competent jurisdiction that the Owner did not have a basis to require the default or termination of such Subcontractor, the Owner shall pay the reasonable costs incurred by the Construction Manager in connection with such default or termination.

11.6 Survival

11.6.1 The provisions of this Article 11 shall survive the Final Completion of the Project or the expiration or earlier termination of this Agreement.

ARTICLE 12 - INSURANCE

12.1 Insurance

The Construction Manager shall maintain insurance for the Project as follows:

12.1.1 The Construction Manager will be required at all times beginning on the date hereof, and until receipt of written notice from the Owner pursuant to Section 12.1.2 (if any), to comply with the insurance requirements attached hereto as Exhibit J. The Construction Manager shall be entitled to reimbursement for costs of maintaining such insurance at the fixed rate of one and one seventeenth percent (1.17%) of the Cost of the Work.

12.1.2 At the Owner's option, the Owner may obtain an owner controlled insurance program ("OCIP") for the Project to provide for general liability and workers' compensation insurance that includes those terms set forth in Exhibit J. Copies of any such policies and manual shall be provided to the Construction Manager for its review, prior to binding of the coverage. If, at any time during the Project, the Owner notifies the Construction Manager in writing that the Owner has obtained an owner controlled insurance program for the Project, the Construction Manager shall within seven (7) days from receipt of such notice cancel any insurance coverages specially obtained for the Project pursuant to Section 12.1.1, and the Construction Manager will be reimbursed for any costs incurred through the date of the cancellation of the policies.

12.1.3 Property Insurance

a. Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on an "all-risk" or equivalent policy form in the amount of the PGMP, plus value of subsequent Changes and cost of materials supplied or installed by others, comprising total value for the entire Project at the Project Site on a replacement cost basis. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until the Owner has obtained a full TCO for all phases of the Project. This insurance shall include interests of the Owner, the Construction Manager, Subcontractors, and sub-subcontractors in the Project.

b. Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and the Construction Manager's services and expenses required as a result of such insured loss. Coverage for earthquake, flood, and windstorm shall be reasonably sublimited subject to the Owner's reasonable discretion and market availability. The property insurance shall not include an exclusion for water infiltration.

c. If the Owner does not intend to purchase such property insurance required by this Agreement and with all of the coverages in the amount described above, the Owner shall so inform the Construction Manager in writing prior to commencement of the Work. The Construction Manager may then effect insurance that will protect the interests of the Construction Manager, Subcontractors, and sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Construction Manager is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Construction Manager in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

d. If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

e. This property insurance shall cover portions of the Work stored off the Project Site, and also portions of the Work in transit, so long as storage and transit are within the contiguous United States.

ARTICLE 13 - INDEMNITY

13.1 Indemnity

13.1.1 To the fullest extent permitted by Applicable Laws and subject to the terms and conditions of this Agreement, the Construction Manager shall: (a) indemnify and hold harmless each of the Indemnitees, from and against any and all Losses that may be incurred by any of the Indemnitees as a result of, in connection with, or as a consequence of (i) any breach of this Agreement by the Construction Manager, (ii) any breach of a Subcontract by a Subcontractor, (iii) the infringement of any copyright, patent or trademark arising out of the performance of any of the Services under this Agreement or the performance of the Work, (iv) a violation by the Construction Manager or any Subcontractor of any Applicable Laws or any Permits pertaining to performance of the Work, (v) any negligent acts or omissions or willful conduct of the Construction Manager or any Subcontractor or any of their respective employees, agents or representatives in connection with the Services or the Work, (vi) any breach of any Applicable Provisions caused by or arising out of the performance of the Services or the Work, (vii) damage to property (but excluding the Work itself) or death or injury to any person resulting from the performance of any element (i.e., the construction and installation) of the Work and the access granted to perform the Work; and (b) defend each of the Indemnitees against any Recovery Action.

13.1.2 Notwithstanding anything to the contrary in Section 13.1.1 hereof, any of the Indemnitees may elect, at any time, to defend itself against any Recovery Action, with counsel of its choice. If an Indemnitee does not exercise such election, (a) any counsel proposed to be retained by the Construction Manager to defend such Indemnitee shall not be so retained without the prior written approval of such Indemnitee, (b) the Construction Manager shall, and shall instruct the counsel that it retains to, keep such Indemnitee apprised in writing, on a regular basis, of the status of the Recovery Action, and (c) the Recovery Action shall not be settled without such Indemnitee's prior written approval of the settlement to the extent such settlement affects any of the Indemnitees. Nothing contained herein shall limit the Construction Manager's obligation to indemnify the Owner for reasonable attorney's fees in defense of any Recovery Action.

13.1.3 The foregoing indemnity shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the benefit of the Construction Manager under any applicable workers compensation, disability benefits or other similar employee benefit acts.

13.1.4 In the event the Owner or any of the other Indemnitees incur any Losses or any Recovery Action is asserted or instituted against the Owner or any of the other Indemnitees and the Construction Manager refuses to comply with its indemnification obligations, the Owner shall be entitled to withhold from any payments then due or thereafter becoming due to the Construction Manager under this Agreement such amount as may be deemed sufficient, in the reasonable judgment of the Owner, to protect it and the other Indemnitees against any Losses that they may incur, and the Owner shall also be entitled to apply any such withheld amount to compensate itself and the other Indemnitees for any Losses that they actually incur.

13.1.5 The Construction Manager shall include in each Subcontract an indemnity provision substantially similar to the provisions in this Section 13.1, which shall also expressly provide that the Subcontractor thereunder shall defend, indemnify and hold harmless the Indemnitees, in addition to the Construction Manager, and that the Indemnitees are third party beneficiaries of such provision.

13.1.6 The provisions of this Section 13.1 shall survive Final Completion of the Project or the expiration or earlier termination of this Agreement.

ARTICLE 14 - PAYMENTS TO CONSTRUCTION MANAGER

14.1 Base Fee

14.1.1 In consideration of the Construction Manager's performance of all of the Services and its other obligations under this Agreement, the Owner shall pay to the Construction Manager the Base Fee, in addition to payments on account of the Cost of the Work, which shall be a fee in an amount equal to three and one tenth percent (3.10%) of the Cost of the Work. In the event the Owner elects to have the Construction Manager act as Executive Construction Manager, the Owner and the Construction Manager shall execute a Change Order to this Agreement setting forth the additional compensation to be paid to the Construction Manager. In no event shall the Construction Manager be entitled to receive a Base Fee from the Owner on account of the costs of insurance, SDI or bonds.

14.1.2 The Base Fee shall be paid to the Construction Manager monthly, in proportion to the Direct Work Cost component of the Work performed in the immediately preceding month, subject to retention of ten percent (10%) of the Cost of the Work before reduction of retention against the Cost of the Work. Provided that the Work is being performed satisfactorily and in a timely manner, and further subject to the Owner's sole and absolute discretion after taking into account other factors pertaining to the Project, the Owner may cease to withhold further retention after such time that the Project is fifty percent (50%) complete, as determined by the Owner. The retained portion of the Base Fee shall be released to the Construction Manager as part of the Final Payment. Notwithstanding anything to the contrary herein, the Owner shall not be required to release to the Construction Manager, prior to the Final Payment, any amount that would reduce the retention against Base Fee as provided herein to an amount less than five percent (5%) of the total Base Fee paid to the Construction Manager to date.

14.1.3 Notwithstanding anything to the contrary in the Contract Documents, and with respect to any Change Order, in no event shall the Construction Manager receive any Base Fee on the Cost of the Work to the extent attributable to the Construction Manager's or any Subcontractor's overtime or "premium" time that is necessary due to the Construction Manager's fault.

14.2 Schedule Performance Incentive Fee

14.2.1 The Construction Manager shall be entitled to receive a Schedule Performance Incentive Fee with respect to certain Milestone Events achieved by the Construction Manager (including for such Milestone Events achieved prior to the establishment of the GMP, but not until such time as the GMP is established). Subsequent to the establishment of the GMP, for each Milestone Events which are achieved, the Construction Manager shall be entitled to a Schedule Performance Incentive Fee in an amount equal to one fourth (1/4) of one quarter percent (0.25%) of the Direct Work. Any such Schedule Performance Incentive Fee earned by the Construction Manager shall be paid to the Construction Manager pursuant to a Change Order increasing the GMP by the amount of the Schedule Performance Incentive Fee together with the next progress payment due after the Construction Manager shall have notified the Owner of the completion of the applicable Milestone Event, provided that the Owner and the Owner's Representative shall have agreed that such completion occurred prior to the corresponding Milestone Event. In the event a GMP is not established pursuant to Section 15.5.1, no Schedule Performance Incentive Fee shall be payable to the Construction Manager.

14.2.2 In the event the Construction Manager shall not have achieved a particular Milestone Event, but the Owner believes that the Construction Manager used its best efforts to do so, the Owner

may, in the exercise of its sole and absolute discretion, pay to the Construction Manager, with the next progress payment due hereunder, some or all of the Schedule Performance Incentive Fee allocated to such Milestone Event.

14.3 Cost of the Work

14.3.1 The Owner shall reimburse the Construction Manager for the Direct Work Cost and the General Conditions Costs, as fully set forth in Exhibit K attached hereto. The Construction Manager shall use its best efforts to minimize the Direct Work Cost and General Conditions Costs, consistent with this Agreement, the industry standards set forth herein, the interests of the Owner, and the Owner's instructions.

14.3.2 Notwithstanding anything to the contrary herein, including Exhibit K, the following General Conditions Costs will be requisitioned to the Owner on an actual incurred basis:

- a. Laborers, teamster, elevator operators, master mechanics, site safety manager, and fire safety manager
- b. Permits;
- c. Progress photos and preconstruction surveys;
- d. Scheduler; and
- e. Staff.

14.3.3 Notwithstanding anything to the contrary in this Agreement, the following General Conditions Costs shall be calculated on a lump sum basis; however, in the event the Owner and the Construction Manager are unable to agree on a lump sum amount, these General Conditions Costs will be calculated on an actual incurred basis.

- a. Tools and supplies;
- b. Equipment, including personal protective equipment;
- c. General office expenses, including but not limited to phone, internet, furniture, printers, blueprints, parking, and transportation;
- d. Surveys;
- e. Office trailers; and
- f. Any other General Conditions Costs, except those identified in Section 14.3.2 and Sections 2.3.1, 2.3.3 and 2.3.5.1 of Exhibit K, provided that the Burden Rate shall always be fixed.

14.4 Discounts, Rebates and Credits

14.4.1 The Cost of the Work shall be credited with all rebates, trade discounts, credits on taxes or credits realized on cash deposits. The Construction Manager shall take such steps as are reasonably necessary and appropriate to obtain such discounts, rebates and credits; provided, however, the Construction Manager shall not be required to utilize its own funds to secure such discounts, rebates and credits. Any tools, supplies or equipment left at the Project Site at the completion of the Project

shall be transferred to the Owner in good condition, subject to ordinary wear and tear. The Construction Manager shall provide a list of all such equipment to the Owner.

14.4.2 The Owner and the Construction Manager anticipate that sales and compensating use taxes will not be payable in connection with the purchase or incorporation of materials, fixtures and equipment in the Project. The Owner shall use commercially reasonable efforts to deliver such documents or instruments as may be required to evidence the entitlement to such exemption.

14.5 Subcontractor Default Insurance

14.5.1 The Owner shall reimburse the Construction Manager for the cost of Subcontractor Default Insurance (“SDI”), if required by the Owner, at a rate of one and fifteen hundredths percent (1.15%) of the Direct Work Costs component of the Cost of the Work. The cost for SDI shall be invoiced and based upon the overall percentage of the Work in progress and shall not be subject to retainage. Construction Manager shall warrant that no trades or contractors shall be excluded from the Construction Manager’s SDI program.

14.5.2 If the Owner elects not to require the Construction Manager to provide Subcontractor Default Insurance, the Owner may maintain its own SDI for this Project and no payments shall be made to the Construction Manager for the cost of SDI.

14.5.3 The SDI, whether provided by the Construction Manager or by the Owner, at the Owner’s election, shall be in place prior to the establishment of the GMP pursuant to Article 15.

14.6 Bonds

14.6.1 The Owner shall reimburse to the Construction Manager the actual and demonstrated cost of payment and performance bonds, to the extent such bonds are required by the Owner.

ARTICLE 15 - PRELIMINARY GUARANTEED MAXIMUM PRICE; GUARANTEED MAXIMUM PRICE

15.1 Preliminary Guaranteed Maximum Price

15.1.1 The Owner has provided the Construction Manager with a written estimate of the target PGMP for the construction of the entire Project, attached hereto as Exhibit L, consistent with the Milestone Events. Such PGMP, together with any agreed upon Changes, shall function as the target Budget until establishment of the GMP. The parties agree that the PGMP does not establish the limit of the GMP.

15.2 Project Budget Control

15.2.1 The Budget shall not be modified without the Owner’s approval, in its sole and absolute discretion. The Construction Manager shall update and revise the Budget and the cash flow and other related financial schedules on a regular basis as necessary or as otherwise requested by the Owner.

15.3 Cost Report

15.3.1 The Construction Manager shall prepare an anticipated cost report of the Cost of the Work on a monthly basis, or more frequently as reasonably directed by the Owner, which shall show

past, present and anticipated future expenditures required to complete the Project and track approved and pending Change Orders and potential Change Orders. Pending Change Orders and known claims for extra costs shall be analyzed as soon as possible after claim submission so that they can be included in the anticipated cost reports with appropriate comments.

15.4 Cost Records

15.4.1 The Construction Manager shall keep detailed accounts and cost records (on a trade by trade basis, including General Conditions Work), in addition to those specified elsewhere in this Agreement, as are normally maintained by experienced and prudent construction managers and/or contractors for work similar in nature and scope to the Work, including, without limitation, cost records required in connection with time and material and/or unit price Change Orders.

15.5 Guaranteed Maximum Price

15.5.1 Within twenty (20) business days (time being of the essence) of the Owner's approval of the awarding of Subcontracts for eighty percent (80%) of the Work, as such percentage is determined by the Owner, the Construction Manager shall tender a guarantee that (a) the Construction Manager will achieve the Milestone Events, and (b) the GMP for the entire Project, as set forth in Exhibit M, shall not be exceeded unless adjusted in a Change Order issued in accordance with the terms of this Agreement. Such submission shall also include a list of the Drawings and Specifications (including any addenda thereto), any assumptions and clarifications made by the Construction Manager, and the Project Schedule. Within ten (10) business days of such tender, the Owner shall submit to the Construction Manager its written comments to the GMP. Within five (5) business days after its receipt of the Owner's written comments, the Construction Manager shall revise the GMP to reflect such comments and deliver the same to the Owner for final approval. The Owner shall advise the Construction Manager in writing within five (5) business days of such resubmittal of the Owner's decision to accept such revised GMP submission or reject same and elect to terminate this Agreement pursuant to Section 19.1.4. If the same is accepted by the Owner, the guarantee by the Construction Manager, as revised pursuant to this Section 15.5.1, shall thereafter be referred to as the GMP, and shall be attached hereto as Exhibit M. If the GMP is adjusted in a Change Order issued in accordance with the terms of this Agreement, the term GMP shall mean the amount designated from time to time in any such Change Order as the adjusted GMP. All reimbursable costs paid to the Construction Manager under the EWA shall be included in the GMP.

15.5.2 Upon establishment of the GMP, the Construction Manager shall be obligated to complete the entire Project at a total cost not in excess of the GMP and achieve the Milestone Events, as set forth in such GMP.

15.5.3 Without limiting all other rights and remedies of the Owner under this Agreement, in the event the Construction Manager fails to strictly comply with the requirements of Section 15.5.1, through no fault of the Owner, the Construction Manager shall not be entitled to further payment under this Agreement until such noncompliance is cured.

15.6 Determination of the PGMP and GMP

15.6.1 The PGMP and GMP for the construction of the Project shall include itemized schedules of the costs related thereto and shall be comprised of the sum of the following elements:

- a. The cost of trade work which has been awarded;

b. The Construction Manager's estimate of the cost of trade work which has not been awarded;

c. The General Conditions Costs (which shall not include the costs identified in Subsections (f), (g) and (h) herein below) and such costs shall be converted to a lump sum amount at the time the Guaranteed Maximum Price is established;

d. A Contingency in an amount equal to three percent (3%) of the aggregate of the sums identified in Subsections (a), (b) and (c) hereof, and subject to the increase as provided in Section 15.13.2, which shall be available for use by the Construction Manager as provided in Section 15.11 hereof, provided however, that the Contingency shall be credited with amounts spent from the Contingency prior to the establishment of the GMP in connection with Subcontracts purchased prior to the establishment of the GMP, but further provided however that the Contingency shall not be less than three percent (3%) of the aggregate of the sums set forth above upon the establishment of the GMP; and

e. The Base Fee, calculated as provided in Section 14.1.1 hereof;

f. Cost of payment and performance bonds, if any, calculated as set forth in Section 14.6.1;

g. Cost of insurance required to be maintained by the Construction Manager under this Agreement, calculated as set forth in Section 14.5; and

h. Cost of Subcontractor Default Insurance, if any, calculated as set forth in Section 14.6.

15.7 Taxes Included in PGMP and GMP

15.7.1 The PGMP and GMP shall include, to the extent applicable to the Owner, all taxes included in the Cost of the Work which are legally enacted at the time that this Agreement is executed.

15.8 No Escalations

15.8.1 The Construction Manager understands and agrees that, except as provided in Section 15.8.2, escalation in the costs of labor and/or materials, regardless of the cause for such escalation, including, without limitation, Unavoidable Delays and the Owner-caused delays, shall not constitute a Change or entitle the Construction Manager to a Change Order or additional payment of any nature.

15.8.2 In the event that aggregate Unavoidable Delays and the Owner-caused delays exceed sixty (60) days, the Construction Manager shall be entitled to receive the actual, demonstrated escalation in the costs of labor and/or materials attributable to such delays, but only with respect to the portion of such delays that exceeds such sixty (60) days period.

15.9 Cost Overruns

15.9.1 If the aggregate of the actual Cost of the Work and the Base Fee exceeds the GMP, the Construction Manager shall pay and bear the entire amount of such excess.

15.10 Allowances

15.10.1 The parties acknowledge that the Allowances, Allowance Items and Total Allowance Amount may fluctuate due to a number of circumstances, including the fact that the Owner may not have yet selected the exact type or quantity of such materials, equipment or other items. Accordingly, the parties have agreed that, unless otherwise provided in the Contract Documents:

a. Materials, equipment and other items under an Allowance shall be selected by the Owner in a timely manner so as to avoid delays in the Work;

b. Allowances shall cover the cost of materials and equipment delivered at the Project Site, and all required taxes, labor, installation and other expenses, less applicable trade discounts, contemplated for stated Allowance amounts; and

c. The Construction Manager's costs for unloading and handling an Allowance Item at the Project Site and overhead and profit contemplated for such Allowance Item shall be deemed to be included in the General Conditions Costs and the Base Fee and shall not be included in the Allowance.

15.10.2 The GMP contains Allowances for various items, the actual cost of which may increase or decrease based on actual Project Site conditions, construction documents, and interior design documents which have not yet been completed, and/or utility and regulatory requirements. The Construction Manager has used its best efforts in estimating the amount of each Allowance, and does not believe the Allowances, as finally adjusted, will exceed the Total Allowance Amount. When it becomes possible to convert an Allowance into a line item amount, the Construction Manager and the Owner shall execute a Change Order documenting the line item amount. As Allowances are converted, the GMP shall be adjusted as follows:

a. If the line item amount exceeds the Allowance, the GMP shall be increased by an amount equal to the amount by which the line item exceeds the Allowance.

b. If the line item amount is less than the Allowance, the Contingency shall be increased by an amount equal to the amount by which the Allowance exceeds the line item.

15.11 Use of Contingency Funds

15.11.1 The Contingency shall be used by the Construction Manager solely to cover the following Contingency Costs:

a. cost overruns in the purchasing of Subcontracts;

b. costs incurred to repair defective or damaged work executed by the Construction Manager or any of its Subcontractors which are not otherwise reimbursable hereunder or recoverable from a Subcontractor (but only to the extent not caused by the gross negligence or willful misconduct of the Construction Manager or its Subcontractors) provided that the Construction Manager uses best efforts to pursue recovery from Subcontractor Default Insurance;

c. costs incurred due to the default or non-performance of a Subcontractor which are not reasonably recoverable from such Subcontractor or Subcontractor Default Insurance furnished by the Construction Manager under this Agreement and provided that the Construction Manager has made a claim under such insurance;

d. Direct Work schedule recovery costs incurred due to delays or potential delays in achieving a Milestone Event provided such delays or potential delays are caused by the Construction Manager or any Subcontractor and with respect to which the Construction Manager is not otherwise compensated and which are not reasonably recoverable from such Subcontractor or Subcontractor Default Insurance; and

e. Except as otherwise provided in this Section 15.11.1, other costs which may constitute a part of the Cost of the Work under this Agreement but not be reimbursable as a Change.

The Construction Manager shall provide an explanation to the Owner on a monthly basis in connection with the payment application process when it desires to utilize funds from the Contingency to cover costs as described herein.

15.11.2 In the event the Construction Manager or any Subcontractor fails to perform any of the Work in accordance with the Contract Documents, and the Owner provides the Construction Manager with written notice of its intent to perform such Work and performs the same upon the Construction Manager's failure to do so, the Owner shall be entitled to utilize Contingency funds in order to pay for the costs it incurs in performing such Work.

15.11.3 If the Owner and the Construction Manager disagree on whether the use of Contingency is an allowable use, the Owner shall be permitted to direct the use of Contingency and the Construction Manager shall be permitted to reserve its rights with respect to such use.

15.12 Administration of the Contingency

15.12.1 Notwithstanding anything to the contrary contained in this Agreement, (a) utilization of any portion of the Contingency by the Construction Manager shall be subject to the Owner's review and approval of costs prior to their expenditure, and (b) the Owner shall have the right to disallow the Construction Manager's utilization of the Contingency to the extent that the Owner concludes that the costs to be paid do not qualify as part of the Cost of the Work or can be enforced against or collected from any Subcontractor.

15.12.2 In all instances, as a condition for the Owner's approval for the utilization of Contingency, Contractor must be pursuing and prosecuting a claim under Subcontractor Default Insurance if appropriate, and in the absence or denial of a valid claim under Subcontractor Default Insurance, using commercially reasonable efforts to pursue any remedies, legal, equitable or otherwise, that Contractor may have against any Subcontractors responsible, if any and in whole or in part, for the condition or event giving rise to the proposed use of Contingency, and shall, in Contractor's written request to utilize Contingency, demonstrate to the Owner's reasonable satisfaction that the Contractor is pursuing or intends to pursue such claims or remedies. Any amounts subsequently recovered from a Subcontractor responsible for the condition or event giving rise to the use of Contingency shall be used to replenish the Contingency.

15.13 Trade Procurement

15.13.1 Notwithstanding that the GMP submission shall contain a trade breakdown, the completion of the Project for the GMP is being guaranteed with respect to the total cost of the Project, and not the cost for each or any component or part thereof. As Subcontracts are awarded for each of the trades shown in the trade breakdown which were not awarded prior to the establishment of the GMP, the trade breakdown shall be adjusted as follows:

a. If the amount as awarded is less than the amount shown on the trade breakdown, the amount shown on the trade breakdown and the GMP shall be reduced by the difference between the two amounts.

b. If the amount as awarded is greater than the amount shown on the trade breakdown, the amount shown on the trade breakdown shall be increased by the difference between the two amounts and, to the extent that the Contingency is sufficient, the Contingency shall be reduced by the same amount. The GMP shall not be adjusted.

15.14 Shortfall

15.14.1 Each Application for Payment submitted by the Construction Manager shall constitute a representation that to the best knowledge of the Construction Manager the undisbursed remainder of the GMP will be sufficient to fund the performance and completion of the Work. If at any time the Owner, in good faith, determines that the undisbursed remainder of the GMP will not be sufficient to complete the Work, then no additional payments shall be made to the Construction Manager hereunder unless and until the Construction Manager, at its sole cost and expense, performs a sufficient portion of the Work so that the portion of the GMP then remaining unpaid, as reasonably determined by the Owner, shall be sufficient to complete the Work.

15.15 Progress Payments

15.15.1 Based upon each Application for Payment and accompanying documents submitted by the Construction Manager in accordance with this Agreement, and the Certificates for Payment, the Owner shall make progress payments to the Construction Manager in accordance with the terms of this Section 15.15. Each Application for Payment shall include an executed original Construction Manager's Waiver and Release of Lien.

15.15.2 The Construction Manager shall submit to the Owner for the Owner's approval, prior to any progress payment being made by the Owner on account of the Direct Work, schedules of values, which shall be prepared on a form provided by the Owner, conform to the Budget and contain a Schedule of Values, and must be approved by the Owner as so approved and as may be amended, modified, revised or supplemented, from time to time, in accordance with the terms of this Agreement. The Schedule of Values shall: (i) be prepared in a form with such detail and supported by such data to substantiate its accuracy as the Architect and the Owner or Owner's Representative may require; (ii) be broken down into cost categories indicating material in fabrication, material fabricated and stored off-site (if permitted by the Owner), material delivered and stored on-site, and material in-place; (iii) include reserves for testing, start-up, commissioning, Punch List work and final record documentation of the Work; and, (iv) provide other detail to permit the Owner to verify the Direct Work Cost and its percentage completion on a monthly basis. The Schedule of Values shall be used only for the purpose of reviewing and approving monthly Applications for Payment and the other purposes provided for in this Section 15.15, but not for any other purpose. The Schedule of Values shall not be amended, modified, revised or supplemented by the Construction Manager except as necessary to take into account adjustments to the Direct Work Cost or as otherwise required pursuant to this Section 15.15. No progress payment except for the first one shall be made unless the Schedule of Values shall have been finalized. For each progress payment (except for the first one if the Schedule of Values shall not have been finalized in time), the Construction Manager shall utilize the Schedule of Values to provide a projection of the monthly cash flows required to fund the Work through to Final Completion.

15.15.3 Subject to the other provisions of this Agreement, the amount of each monthly progress payment during the Construction Phase shall be computed as follows:

- a. calculate the product of (i) the entire Direct Work Cost component of the Cost of the Work, based on the Schedule of Values, times (ii) the Percentage of Completion;
- b. subject to fulfillment of all of the terms and conditions set forth in Section 15.16.3 hereof with respect to stored equipment and fabricated materials, add eighty-five (85%) percent of the portion of the Direct Work Cost incurred to date which is allocable to such equipment and fabricated materials stored in accordance with such Section 15.16.3;
- c. subtract the amount retained from previous progress payments under this Section 15.15.3 that has not yet been paid to the Construction Manager;
- d. subtract amounts already paid to the Construction Manager in respect of the Direct Work Cost (including any retainage paid);
- e. subtract retainage on the subject progress payment pursuant to Section 15.15.4 hereof;
- f. subtract amounts withheld under Section 15.18 hereof;
- g. add, as the portion of the Base Fee payable to the Construction Manager, the product of (i) the amount of the Cost of the Work component of the subject progress payment, before applying retainage, times (ii) the rate applied to calculate the Base Fee pursuant to Section 14.1.1 hereof;
- h. subtract retainage on such portion of the Base Fee pursuant to Section 14.1.2 hereof; and
- i. add, as reimbursement for General Conditions Costs, the Projected General Conditions Costs (as defined in Section 15.16.7) for the month following the current period, subject to adjustment as follows: (1) in the event the actual General Conditions Costs incurred by the Construction Manager for the current period is less than the amount paid by the Owner for Projected General Conditions Costs for the same period, such overpayment shall be credited toward the Projected General Conditions Costs for the following month; (2) in the event the actual General Conditions Costs incurred by the Construction Manager is less than the Projected General Conditions Costs for the same period, such underpayment shall be included in the following month's Projected General Conditions Costs. Notwithstanding anything to the contrary, in no event shall the General Conditions Costs payable by the Owner exceed the product of (x) the General Conditions Costs times (y) a fraction of the numerator of which is the amount of the Direct Work Cost component of the subject progress payment, before applying retainage, and the denominator of which is the entire Direct Work Cost component of the Cost of the Work plus (z) the Projected General Conditions Costs for the month following the current period.

15.15.4 The aggregate of the respective amounts retained by the Construction Manager under the Subcontracts with respect to a particular progress payment under this Agreement shall be retained from such progress payment, it being understood, however, that in no event shall the Construction Manager provide, without the Owner's prior written consent, for retainage under any Subcontract that is more favorable to the Subcontractor thereunder than the Required Subcontractor Retainage. The Owner will consider requests by the Construction Manager for providing in Subcontracts for a reduction in such retainage from and after the time that a Subcontractor shall have performed Work under its Subcontract (through completion thereof or the storage of materials constituting such Work) which equals at least fifty (50%) percent of the value of all Work to be performed under such Subcontract; provided, however, such Subcontract shall also provide that any such reduction in retainage will be conditioned, as of the date Subcontractor achieves completion of fifty (50%) percent of its Work and at

all times thereafter, upon the Subcontractor not being in default under its Subcontract. Notwithstanding anything to the contrary herein, the Construction Manager shall not release to any Subcontractor any amount that would reduce the retention against such Subcontract to an amount less than five percent (5%) of the total amounts paid to such Subcontractor to date, until such time that such Subcontract is closed out by the Construction Manager and the Owner in accordance with the terms of this Agreement.

15.15.5 Provided that the completed Application for Payment was timely submitted, each progress payment shall be made to the Construction Manager within thirty (30) days after the Owner's receipt of the final form of Application for Payment as approved pursuant to Section 15.16.1.

15.15.6 The Construction Manager shall use the sums paid to it as progress payments (except that portion attributable to the Base Fee) solely for the purpose of the performance of, and payment for, the Work and the Services. The Construction Manager shall hold all monies received in trust for such purpose in accordance with Applicable Laws.

15.15.7 Promptly upon request from the Owner, the Construction Manager shall furnish to the Owner satisfactory proof as to the disposition of any monies paid to the Construction Manager hereunder; provided, however, no provisions hereof shall be construed to require the Owner to see to the proper disposition or application of such monies.

15.15.8 The Construction Manager shall promptly pay the Cost of the Work and all costs, fees, expenses and other sums incurred by the Construction Manager in connection with the Project which do not constitute Cost of the Work, and, at the request of the Owner, shall deliver to the Owner copies of all invoices, receipts, affidavits and other evidence of payment. The Construction Manager shall furnish to the Owner appropriate releases and satisfactions from all Subcontractors, suppliers and other parties furnishing labor or materials in the performance of the Work or other services in connection with the Project. The Construction Manager shall maintain its ledgers separately with each Subcontractor under the Contract Documents and will provide, upon the Owner's written request, a certified statement as to the payments received and payments made to any particular Subcontractor. The Owner shall have the right to contact Subcontractors directly to ascertain (i) what amounts, if any, are due to them from the Construction Manager, (ii) the projected costs of completing their remaining portion of the Work, and (iii) the scope, amount and substance of any claims or disputes between them and the Construction Manager. To the extent any funds to be disbursed by the Owner to the Construction Manager under this Agreement include sums payable by the Construction Manager to any Subcontractor, the Owner may, at its election, disburse such sums to the Construction Manager by means of a check payable jointly to the Construction Manager and the applicable Subcontractor. Upon the Owner's receipt of evidence that the Construction Manager shall have defaulted with respect to its obligations to make payments to any of its Subcontractors, the Owner reserves the right, after five (5) days prior written notice to the Construction Manager, to retain any monies then due or thereafter becoming due to the Construction Manager under this Agreement and pay the same directly for labor, materials, equipment, tools, plant, facilities, services and all other obligations of the Construction Manager arising out of the Work. The notice periods provided for in this Section 15.15.8 are intended to allow the Construction Manager the opportunity to cure any alleged default in nonpayment or provide the Owner with information relating to the alleged nonpayment of a particular Subcontractor.

15.16 Application for Payment

15.16.1 By no later than the fifteenth (15th) day of each month during the Construction Phase, the Construction Manager shall submit to the Owner and the Owner's Representative a preliminary Application for Payment for Work completed and projected to be completed in such month, in accordance with the respective Schedule of Values, in a form acceptable to the Owner. The

Construction Manager shall receive, review, and recommend for payment, in whole or in part, all Subcontractors' pay requests and assemble all costs on a monthly basis into a single Application for Payment. The Construction Manager shall meet with the Owner and the Owner's Representative within five (5) Work Days after the receipt by them of such preliminary Application for Payment to review same. On or before the twenty-fifth day of such month, the Construction Manager shall submit to the Owner, Owner's Representative and Architect a final form of the Application for Payment based on the aforesaid preliminary copies and incorporating any changes thereto agreed upon after such review meeting. Each Application for Payment shall (a) contain a separate category for cost of materials stored off-site (subject to fulfillment of all of the terms and conditions set forth in Section 15.16.3 hereof) and applicable retainage; and (b) show the Percentage of Completion of each portion of the Work as of the end of the period covered by the Application for Payment. Each Application for Payment shall accurately reflect the retainage held from and being held by the Construction Manager and the current percentage of completion on a line-item basis, shall be notarized, and supported by such data substantiating the Construction Manager's right to payment as the Owner and the Owner's Representative may require, and shall be accompanied by (a) cost data to support the application (including copies of Subcontractors' pay requests on AIA forms G702 and G703 accurately reflecting current percentage of completion on a line-item basis, verified invoices and labor sheets, and prior to the establishment of the GMP, backup for actual General Conditions Costs incurred); (b) the Construction Manager's certification in a form acceptable to the Owner, executed by the Construction Manager; (c) a Subcontractor's Waiver and Release of Lien executed by all Subcontractors, sub-subcontractors and suppliers and any person who has filed a preliminary notice on the Project or with respect to all Work for which payment is requested; (d) the Construction Manager's Waiver and Release of Lien and Subcontractor's Waiver and Release of Liens, executed by, respectively, the Construction Manager and all of the above-specified Subcontractors, sub-subcontractors and suppliers, with respect to all Work for which payment was made at least twenty (20) days prior to the submission of the Application for Payment; (e) an updated list of Subcontractors and suppliers and a disbursement record, in a form acceptable to the Owner, reflecting each disbursement made to date to all Subcontractors and suppliers; (f) the updated Project Schedule and Monthly Report required pursuant to, respectively, Article 10 and Article 5 hereof, and (g) any other documents or materials required by other provisions of this Agreement to be delivered with an Application for Payment.

15.16.2 Each Application for Payment shall also include an affidavit or affirmation by the Construction Manager setting forth, for the period for which payment is requested, the following:

- a. The names and addresses of all Subcontractors and suppliers and the price of each Subcontract or purchase order included in such Application for Payment.
- b. The total cost of the Work performed by Subcontractors or by the Construction Manager using its own forces (other than for General Conditions Work), including all adjustments, the total amount paid by the Owner to the Construction Manager and the amount retained by the Owner to the date of application, the amount of the current application and the balance due on the cost of the Work to be performed by Subcontractors after such payment is made, the project number and the purchase order number provided by the Owner.
- c. The percentage of completion, as approved by the Owner, on a trade-by-trade basis of the Work being performed by the Subcontractors.
- d. Satisfactory evidence, including lien waivers that all Subcontractors, vendors and laborers have been paid all amounts advanced by the Owner for their accounts as called for pursuant to previous payment applications.

e. A certification as part of the final application that includes all open claims of the Construction Manager, known or which the Construction Manager reasonably should have known existed as of the date of the application, against the Owner and/or the Project relating to this Agreement or to the Work.

f. Such other information as the Owner may reasonably request from time to time to determine if the amount requested is due and owing.

15.16.3 Unless otherwise agreed in writing, and notwithstanding anything to the contrary contained in this Agreement, the Owner will make payment only on account of equipment and materials purchased by the Construction Manager for installation and incorporation into the Work when such equipment and materials have been installed; provided, however, when such materials and equipment are needed to maintain the sequence of the Work and have been delivered to and safely stored and protected at the Project Site, or at an off-site location approved in advance and in writing by the Owner, the Owner will make payment on account of such materials and equipment if the following conditions shall have been satisfied: (i) the Owner shall have verified the storage of the same; (ii) if the materials are stored off-site, then the Owner will only make payment on account of fabricated materials (i.e., not raw materials); (iii) compliance by the Construction Manager with procedures satisfactory to the Owner to establish the Owner's title to such stored equipment and materials or otherwise protect the Owner's interest, which procedures shall include, for any such equipment and fabricated materials stored off the Project Site, applicable insurance, storage and transportation to the Project Site; (iv) title to any such equipment and fabricated materials stored off-site passing to the Owner upon payment therefor; provided, however, that the Construction Manager shall bear the risk of loss of such equipment and fabricated materials at all times while such equipment and fabricated materials are stored off-site and during transportation to the Project Site, and the Construction Manager shall be responsible for the proper care, storage, preservation, insurance and protection of all such equipment and fabricated materials; and (v) the equipment and fabricated materials stored off-site shall be appropriately tagged and segregated in order to further protect the Owner's interest therein prior to delivery thereof to the Project Site. The Construction Manager hereby absolutely and unconditionally guarantees to the Owner delivery of all equipment and fabricated materials stored off-site as aforesaid, free and clear of all liens and encumbrances, and the Construction Manager shall indemnify, defend and save the Owner harmless from and against any and all loss, cost, expense, liability, damage or injury, including legal fees and disbursements, that the Owner may directly or indirectly sustain, suffer or incur, arising or resulting, directly or indirectly, from such storage of equipment and fabricated materials off-site or from the failure of any Subcontractor or supplier to deliver such stored equipment and fabricated materials to the Owner as and when called for by the Owner or the Construction Manager.

15.16.4 The Construction Manager shall submit its Applications for Payment for the Final Payment within twenty (20) days after the Owner has determined, following final inspection, that the Work has been fully completed in accordance with this Agreement. In order for the Owner to make the Final Payment, such Applications for Payment shall contain, and be accompanied by, the information and documents required for the Applications for Payment for progress payments specified in this Article and, in addition, the following:

a. All of the Project Documents;

b. A certification from each Subcontractor that all of the Project Documents for which such Subcontractor was responsible have been delivered by such Subcontractor to the Construction Manager and are complete and accurate;

c. Any evidence that the Owner may require in order to demonstrate that all Subcontractors, suppliers and laborers have fully discharged their respective obligations and been paid or will be paid in full from the proceeds of the Final Payment;

d. A letter from the Architect and/or the Owner's Representative stating that all Punch List items have been completed;

e. The Construction Manager's Final Affidavit and Release of Claims to the extent payment is made by the Owner;

f. A Subcontractor's Final Affidavit and Release of Claims executed by all Subcontractors and any person who has filed a lien against the Project Site, to the extent payment is made by the Owner;

g. If required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of this Agreement, to the extent and in such form as may be designated by the Owner; and

h. Any consents to the Final Payment required of sureties, if any.

15.16.5 Within fifteen (15) days of the making of the Final Payment, the Construction Manager shall complete and submit to the Owner a final list of Subcontractors and a disbursement record in a form acceptable to the Owner, reflecting all disbursements made to all Subcontractors, and, if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances, arising out of the Contract Documents, to the extent and in such form as may be designated by the Owner.

15.16.6 The making of the Final Payment to the Construction Manager shall not constitute a waiver of any claims by the Owner arising from (a) unsettled liens, (b) defective Work not discovered by the Owner until after making such Final Payment, (c) the Construction Manager's failure to perform any Services in compliance with the requirements of this Agreement, (d) the terms of any warranties or guarantees required by this Agreement or provided at law or in equity, or (e) claims, demands or damages that are discovered or which arise after Final Payment, or which are covered by any indemnity set forth in this Agreement. The acceptance by the Construction Manager of the Final Payment shall constitute a waiver of all claims by the Construction Manager, except for claims made in writing and identified by the Construction Manager as unsettled no later than the date the invoice for such payment is submitted to the Owner or for claims for indemnification or contribution arising out of third party claims.

15.16.7 Within thirty (30) days from the execution of this Agreement, submit to the Owner an Application for Payment of the projected General Conditions Costs ("Projected General Conditions Costs") for the first month of Work. The Owner shall make payment of such Projected General Conditions Costs within thirty (30) days of receipt of such Application for Payment for the Projected General Conditions Costs to be incurred by the Construction Manager during the first month of Work.

15.17 Certificates for Payment

15.17.1 The Owner's Representative or the Architect, as the case may be, will, within five (5) days after the receipt of Construction Manager's Application for Payment, either (i) issue to the Owner a Certificate for Payment of all or part of the amount requested by the Construction Manager in such Application for Payment, or (ii) notify the Construction Manager and the Owner in writing of its

reasons for withholding a Certificate for Payment. Within ten (10) days after receipt by the Owner of a Certificate for Payment from the Owner's Representative or the Architect, the Owner will approve or decline to approve such Certificate for Payment, or approve part of such Certificate for Payment and decline to approve the balance thereof. If the Owner declines to approve a Certificate for Payment, in whole or in part, the Owner shall provide the Construction Manager with a statement describing generally the reasons for Owner's disapproval; provided, however, the Owner's failure to provide such statement to the Construction Manager shall not operate to waive the Owner's right to disapprove such Certificate for Payment, in whole or in part, or nullify any such disapproval.

15.18 Disapproving the Certificate for Payment or Otherwise Withholding Payment

15.18.1 If any one or more of the following conditions exist:

- a. defective or non-conforming Work has not been remedied;
- b. the Work has not progressed to the point indicated in an Application for Payment;
- c. uninsured third-party claims have been filed or reasonable evidence exists indicating likelihood of the filing of such claims;
- d. failure of the Construction Manager to make payments promptly to Subcontractors or suppliers for Work performed or labor or materials furnished for the Construction Manager, provided the Owner has previously made payment to the Construction Manager for such amounts under the Contract Documents;
- e. damage to the property of the Owner or any Separate Contractor caused by the Construction Manager or any Subcontractor;
- f. failure to carry out the Work in accordance with the Contract Documents;
- g. if the Schedule of Values has been amended, modified, revised or supplemented since the last progress payment, failure by the Construction Manager to provide the Schedule of Values with the next Application for Payment;
- h. failure by the Construction Manager to provide the updated Project Schedule or Monthly Report with the Application for Payment;
- i. failure by the Construction Manager to maintain an up-to-date set of Subcontractors' As-built Drawings and Composite As-built Drawings as provided in the Contract Documents;
- j. filing by any of the Construction Manager's laborers, suppliers, Subcontractors or their sub-subcontractors of a mechanic's lien against the Project Site, and the Construction Manager has not caused the lien to be discharged in accordance with Section 15.21.1; the amount withheld shall equal one hundred and fifty percent (150%) of the amount of the lien plus any reasonable expenses which may be incurred in discharging the lien;
- k. an Event of Default shall have occurred;

l. failure of the Construction Manager to perform its obligations under the Contract Documents;

m. failure of the Construction Manager to provide the Owner with satisfactory releases and lien waivers;

n. failure of the Construction Manager to provide appropriate personnel in accordance with the requirements of the Contract Documents, if any;

o. failure of the Construction Manager to provide appropriate evidence of insurance in conformance with the requirements of the Contract Documents, if any;

p. failure of the Construction Manager to provide the Owner with a complete set of Project Documents for any portion of the Work which has been completed and accepted by the Owner; or

q. if any part of such payment is attributable to Work which is not performed in accordance with the Contract Documents,

the Owner may (i) disapprove, in whole or in part, a Certificate for Payment (ii) otherwise decide to withhold payment, in whole or in part, from the Construction Manager, or (iii) nullify the whole or a part of a payment previously made because of subsequently discovered evidence or subsequent observations, in each case to the extent reasonably necessary to protect the Owner from loss.

15.18.2 If and when the conditions giving rise to the disapproval, withholding or nullification described in Section 15.18.1 hereof have been cured, payment will be made of the applicable withheld amounts, subject to the Owner's right to withhold payment as may be provided elsewhere in this Agreement.

15.18.3 If the Owner is permitted under the provisions of this Section 15.18 or any other provisions of this Agreement to disapprove a Certificate for Payment, in whole or in part, or withhold or nullify any payment to the Construction Manager, and the Owner does in fact do so, the Construction Manager shall continue to perform the Work despite such action by the Owner. Any stoppage of the Work by the Construction Manager due to such action by the Owner shall be a material breach of this Agreement. The Owner shall not be deemed to be in breach of this Agreement by reason of any such disapproval, withholding or nullification. In the event that the Construction Manager breaches this Section 15.18.3 by suspension or otherwise withholding of performance of the Work, in whole or in part, it is understood, acknowledged and agreed that the Owner may recover from the Construction Manager all direct and consequential damages as a result of any breach of this Agreement (including such breach by suspension or withholding of performance), notwithstanding anything to the contrary in this Agreement, including without limitation Sections 10.8.1 and 22.29.1.

15.19 Right of Offset

15.19.1 In addition to any right of setoff provided by law, all amounts due the Construction Manager shall be considered net of indebtedness of the Construction Manager to the Owner and its Affiliates, or any damages due to the Owner hereunder by reason of the Construction Manager's breach of this Agreement and the Owner may deduct any amounts due or to become due from the Construction Manager to the Owner or its Affiliates from any sums or damages due or to become due from the Owner to the Construction Manager under this Agreement.

15.20 No Waiver

15.20.1 No progress payment made hereunder shall be deemed to constitute the Owner's final acceptance or approval of the Services or the Work to which such progress payment relates or to relieve the Construction Manager of any of its obligations, or waive any of the Owner's rights or remedies, with respect to such Services or Work.

15.21 Mechanic's Liens

15.21.1 The Construction Manager shall promptly pay all costs incurred by it in connection with Work performed by the Subcontractors. If the Construction Manager fails to promptly pay any such costs, the Owner reserves the right to apply any monies due to the Construction Manager towards the payments of such costs. If any Subcontractor, or anyone claiming by, through or under such Subcontractor, shall file or cause to be filed any mechanic's lien, notice of pendency, stop order or comparable lien or filing, the Construction Manager shall, within ten (10) business days after of learning of such filing, whether from the Owner or any other source, cause the same to be discharged of record, by bonding or otherwise; provided, however, that the Construction Manager shall not be required to discharge such lien or comparable filing if and to the extent that the Owner has failed to pay the Construction Manager for the Work which is the subject of such lien and such payment was properly due from the Owner pursuant to the terms of this Agreement. In the event the Construction Manager shall have failed to effectuate such discharge within such ten (10) business day period, the Owner shall have the right to do so, by bonding or otherwise, and, in that event, any expense incurred by the Owner in connection therewith, including the premiums due for any bond furnished for such discharge and reasonable attorneys' fees and disbursements, shall be paid by the Construction Manager upon demand or, at the option of the Owner, shall be deducted from any payment then due or thereafter becoming due from the Owner to the Construction Manager under this Agreement.

15.22 Subordination of Liens

15.22.1 To the extent not prohibited by law, the Construction Manager hereby subordinates all contractor's, laborer's, mechanic's, materialmen's and similar liens that it may have or acquire hereunder as to the Work to the liens securing payment of sums now or hereinafter borrowed by the Owner. At the request of the Owner, the Construction Manager shall execute such additional documents as may be requested from time to time by the Owner to give effect to the provisions hereof, and, to the extent not prohibited by law, shall cause Subcontractors and other parties furnishing labor or materials for the Work to subordinate their liens to such aforesaid sums.

15.23 No Security Interests

15.23.1 The Construction Manager shall not enter into any contract for the supply of any component of the Work which purports to grant a security interest or right of repossession to any person or entity respecting the Work or the Project Site, or any portions thereof or chattels placed thereon.

15.24 Construction Manager's Records

15.24.1 The Construction Manager shall maintain accurate records, on a generally accepted accounting basis acceptable to the Owner, of the items constituting the Cost of the Work, the hours worked by the Construction Manager's Representatives in the performance of the Services, the name and job title of such Construction Manager's Representatives, and the compensation paid to it. Upon reasonable notice from the Owner, these records shall be available at the Construction Manager's office during business hours for review and copying by the Owner, and its representatives and employees.

The Construction Manager shall retain these records for a period of ten (10) years after Final Completion or the earlier termination of this Agreement.

15.25 Expedited Mediation

15.25.1 Notwithstanding the foregoing and without waiving any other rights and remedies the parties have under law and/or under this Agreement, in the event of a dispute between the Owner and the Construction Manager during the Project concerning the amounts in dispute exceeding five million dollars (\$5,000,000) in the aggregate, the parties shall resolve the issue(s) through expedited mediation with such mediator as mutually agreed to by the parties, and the parties agree to abide by applicable decisions rendered by such mediator, subject to the parties' rights and remedies under law including, without limitation, the right to resolve such issue(s) in a court of law at a later date, which are expressly reserved.

ARTICLE 16 - DISPUTES AND CLAIMS

16.1 Disputes between the Owner and the Construction Manager

16.1.1 Notwithstanding any dispute that may arise between the Owner and the Construction Manager with respect to the Construction Manager's compensation or any other term of this Agreement, but subject to Section 20.2.1, the Construction Manager shall continue to perform its obligations under this Agreement and the Owner shall pay all undisputed amounts on a timely basis. Notwithstanding the requirements of Section 16.1.6, the Construction Manager acknowledges that a breach of its obligations under this Section 16.1 may cause irreparable harm to the Owner and that there may be no adequate remedy at law available to the Owner by reason of such breach. Accordingly, the Owner shall be entitled to seek mandatory injunctive relief to enforce the Construction Manager's performance of its obligations hereunder as provided by law.

16.1.2 In the event of a dispute between the Owner and the Construction Manager relating to an alleged act or omission by the Owner, the Construction Manager may only assert a claim against the Owner and not against any of the Indemnitees.

16.1.3 Claims must be made by written notice and timely served, as called for in Section 22.6 hereof, and pursuant to the time requirements set forth in this Agreement, upon the Owner or the Construction Manager as the case may be. The responsibility to substantiate any Claim shall rest with the party making such Claim.

16.1.4 Claims by the Construction Manager must be made in writing to the Owner within fifteen (15) days after the Construction Manager first identifies the condition giving rise to the Claim, or such other duration as required by this Agreement. An additional Claim related in any fashion to an earlier Claim that has been properly made must be initiated in full conformity with the requirements of this Section 16.1.4 and will be void unless submitted in such timely manner. The failure to provide written notice of a Claim within the time provided for in this Section shall render such Claim void and preclude any later assertion thereof by the Construction Manager or any Subcontractor or vendor.

16.1.5 If a Claim is not resolved by the parties within thirty (30) days after written notice to the Owner as provided in Section 16.1.4, either party may demand that the other party attend a mediation session and attempt to negotiate a resolution of the Claim. The Owner and the Construction Manager shall use best efforts to select a neutral mediator acceptable to both the Owner and the Construction Manager. In the event no such acceptable neutral mediator is selected, the parties shall request a mediator be assigned by the AAA.

16.1.6 If the Claim is not resolved pursuant to Section 16.1.5 within thirty (30) days from the request for a mediation session made pursuant to that section, then the Claim shall be resolved by recourse to litigation in California.

16.1.7 The Construction Manager hereby consents to the joinder of the Owner as a party to any mediation or litigation commenced pursuant or relating to this Agreement, provided that the Owner consents to such joinder in their sole and absolute discretion in each case.

16.1.8 Notwithstanding any provision to the contrary in this Article 16, the Construction Manager agrees that the Owner shall be permitted, but not required, to implead or join the Construction Manager as a third-party defendant or otherwise in any action commenced by the Owner or any party concerning the Project or the Work performed pursuant to this Agreement.

16.1.9 Pending final resolution of a Claim, unless otherwise agreed in writing, the Construction Manager shall proceed diligently with performance of the Work and the Owner shall continue to pay those sums due to the Construction Manager in accordance with this Agreement.

16.1.10 As required in accordance with Section 6.1 hereof, if the Construction Manager wishes to make a Claim for an extension of a Milestone Event, written notice as provided herein shall be given to the Owner. The Construction Manager's Claim shall include an estimate of any anticipated additional costs and other probable effects of such delay on the progress of the Work. In the case of a continuing delay only one Claim shall be necessary.

16.1.11 If either party to this Agreement suffers injury or damage to person or property whether or not such injury or damage arises out of an act or omission of the other party, of any of the other party's employees or agents, or of others for whose acts such party is or may be legally liable, written notice of such injury or damage, whether or not insured, shall be given to the other party within five (5) business days after first notice of the accident or occurrence is received by the party suffering such injury or damage. The notice shall provide sufficient detail to enable the other party to investigate the matter.

16.2 Investigations of Claims

16.2.1 In the event of circumstances arising out of the Work which require the Owner to perform an Investigation related to the Work that may give rise to a claim or potential claim, and upon request of the Owner, the Construction Manager shall do the following:

- a. Provide reasonable cooperation to the Owner and its representatives who are charged with investigating the nature and circumstances of the claim or potential claim;
- b. Produce all documents and materials in its possession as reasonably requested by the Owner or its representatives;
- c. Require all requested personnel (including those of Subcontractors) to provide their assistance with the Investigation;
- d. Cooperate with the Owner, experts, attorneys and other representatives of the Owner during the course of the Investigation;
- e. Furnish such other reasonable documents or information that may be relevant to the Investigation;

f. Assist in the Investigation of any Subcontractor, vendor or any other party performing services or providing work, labor or material in connection with the Project or the Work; and

g. If requested by the Owner, attend any arbitration, mediation or litigation action or proceeding in connection with the Project, without need for the issuance of a subpoena unless one is ordered by a dispute resolution board or court of law.

ARTICLE 17 - ACCOUNTING REQUIREMENTS

17.1 General Matters

17.1.1 The Construction Manager shall keep complete and detailed accounts and records of all costs included in the Cost of the Work, which accounts and records shall be adequate to verify the amount and expenditure of such costs and in such form and detail as may be acceptable to the Owner. The Construction Manager shall exercise such controls as may be necessary for proper financial management of the Work. The Construction Manager shall maintain a complete set of such accounts and records at the Construction Manager's field office and institute appropriate back-up systems (hard copy and computerized) to safeguard the information. Promptly after a request by the Owner, the Construction Manager shall deliver to the requesting party supporting documentation, in both hard copies and computer readable format, for amounts paid or payable by the Owner, including invoices and payroll records.

17.1.2 The Construction Manager shall maintain appropriate internal control and review procedures. Notwithstanding anything to the contrary, the Owner and its accountants and representatives shall be afforded access to, and the right to audit, the Construction Manager's Books and Records, except with respect to the rates charged by Construction Manager for insurance and Subcontractor Default Insurance, the General Conditions lump sum amount set forth in the Guaranteed Maximum Price, and the base rates for salaries paid by the Construction Manager and applicable burden rates, and the Construction Manager shall preserve all of the same, during the term of this Agreement and for the period of ten (10) years after Final Completion of the Project or the earlier termination of this Agreement, or for such longer period as may be required by law. If any such audit reveals overcharges, the Construction Manager shall, upon demand, repay the Owner the costs of such audit and all such overcharges, together with interest earned on such overcharges at the rate of five (5 %) percent per annum from the date such overcharged amount was paid to or on behalf of the Construction Manager. Promptly after the expiration of such ten (10) year period, if requested by the Owner, the Construction Manager shall deliver to the Owner the originals of all Books and Records.

17.1.3 The provisions contained in the Subcontract with each Subcontractor which are equivalent to the provisions in this Article 17 shall expressly provide that the Owner shall have the same rights that the Construction Manager has under such provisions and that upon the Owner's request, the Subcontractor shall perform its obligations thereunder directly for the benefit of the Owner, as well as the Construction Manager.

17.2 Cost (Tax) Segregation

17.2.1 The Construction Manager acknowledges that the Owner may classify components of the Project into the tax depreciation lives available pursuant to the Internal Revenue Code. The Construction Manager shall work with the Owner and the Owner's representatives to provide the required information and all other documents necessary to permit such classification.

17.3 Internal Allocations

17.3.1 The Construction Manager's accounting and cost control systems shall provide appropriate reports as reasonably dictated by the Owner. The Construction Manager shall conform its accounting and cost control systems to the Owner's reasonable requirements, including Project-specific requirements and requests, including segregating the Cost of the Work as appropriate.

ARTICLE 18 - OWNER'S RESPONSIBILITIES

18.1 Owner's Requirements

18.1.1 The Owner shall provide all information reasonably requested by the Construction Manager regarding the Owner's requirements for the Work with reasonable promptness.

18.2 Defects in Work

18.2.1 The Owner shall promptly notify the Construction Manager of any fault or defect in the Work or non-compliance with the Contract Documents of which it becomes aware, and the Construction Manager shall promptly correct such fault or defect or cause the same to be corrected in accordance with the terms of this Agreement; provided, however, that the failure of the Owner to so notify the Construction Manager of any such fault, defect or non-compliance shall in no event be deemed to waive, modify or otherwise affect any of the Construction Manager's obligations or liability hereunder or impose any liability on the Owner.

ARTICLE 19 - TERMINATION

19.1 Termination by the Owner

19.1.1 The Owner shall have the right to terminate this Agreement, by sending written notice thereof to the Construction Manager with an opportunity to cure within five (5) days, upon the occurrence of any of the following, each of which shall constitute an Event of Default:

- a. the Construction Manager abandons the Project;
- b. the Construction Manager fails to perform the Work in a diligent, efficient, workmanlike, skillful and careful manner or in accordance with the Project Schedule or the provisions of this Agreement;
- c. the Construction Manager repudiates its obligations under this Agreement;
- d. the Construction Manager fails to use an adequate amount or quality of personnel or equipment to complete the Work without delay;
- e. the Construction Manager fails to maintain required insurance;
- f. the Construction Manager makes changes to Key Personnel without the Owner's prior written consent;
- g. the Construction Manager fails to provide or utilize the personnel in accordance with the Staffing Plan;

h. the Construction Manager fails to pay Subcontractors promptly or misapplies funds due Subcontractors pursuant to the Contract Documents;

i. the Construction Manager fails to pay any taxes required in connection with the Work or the Project or pursuant to this Agreement;

j. the Construction Manager fails to perform any other obligation under this Agreement and does not correct such failure within five (5) days after receipt of written notice from the Owner specifying such failure; or

k. the Construction Manager makes an assignment for the benefit of creditors, files a petition in bankruptcy, is adjudged insolvent or bankrupt, applies for the appointment of a receiver of or trustee for the Construction Manager or any substantial part of its property, commences any proceeding under any reorganization, arrangement, readjustment of debt, dissolution or liquidation law or there is commenced against the Construction Manager any such proceeding that remains pending for a period of forty-five (45) days, or the Construction Manager by any act indicates its acquiescence in any such proceeding or to the appointment of a receiver of or trustee for the Construction Manager or any substantial part of its property, or suffers any such receivership or trusteeship to continue undischarged for a period of forty-five (45) days.

19.1.2 The Owner shall have the right, upon a termination of this Agreement by reason of an Event of Default, to take possession of and use all or any part of the Construction Manager's materials, equipment, supplies and other property of every kind used by the Construction Manager in the performance of the Work and to use such property in the manner it deems desirable to complete the Work, and engage the services of other parties therefor. Any such act by the Owner shall not be deemed a waiver of any other right or remedy of the Owner.

19.1.3 If the Construction Manager defaults or fails to carry out any of its obligations under the Contract Documents, regardless of whether this Agreement is terminated or an Event of Default shall have occurred, the Owner, upon seventy-two (72) hours written notice to the Construction Manager, and without prejudice to any other right or remedy the Owner may have, may carry out any or all of the obligations of the Construction Manager, either directly or through others, and charge the cost thereof to the Construction Manager, including without limitation the resulting additional expenses of the Design Professionals. The performance of such obligations by the Owner or by others shall not relieve the Construction Manager of any obligation or liability for the Work and shall not operate to waive any right or remedy of the Owner.

19.1.4 Any provisions hereof to the contrary notwithstanding, the Owner shall have the right to terminate this Agreement without cause at any time by giving the Construction Manager at least twenty (20) days written notice thereof. Upon receipt of such notice, the Construction Manager shall suspend performance of the Work as soon as reasonably practicable or on such later date as may be specified in such notice, and make every reasonable effort to prevent incurrence of any further costs; provided, however, in connection with such termination the Construction Manager shall perform such acts as may be necessary to preserve and protect all existing Work. Upon such termination without cause, the Construction Manager shall retain all sums of money theretofore paid hereunder to the Construction Manager, except if and to the extent such sums of money are due to Subcontractors or were paid in advance to the Construction Manager prior to the payment becoming due to the Construction Manager, in which event the Construction Manager shall pay the same, immediately upon the Owner's direction, to such Subcontractors or to the Owner, and the Owner shall pay to the Construction Manager, subject to the Owner's right to withhold payments to the extent permitted under the terms of this Agreement, (a) all retainages, if any, earned by the Construction Manager except

retainages as to any Subcontracts assumed by the Owner hereunder; (b) a sum of money equal to the Cost of the Work incurred hereunder by the Construction Manager for which payments have not theretofore been made hereunder, including all reasonable costs of demobilization, close-out and site stabilization costs; and (c) the pro rata portion of the Base Fee applicable to the Work performed by the Construction Manager through the effective date of such termination, including any "true up" thereof. In the event of such termination of this Agreement, the Construction Manager shall not be entitled to receive anticipated profits on any Work not yet performed or any damages, consequential or otherwise.

19.1.5 Upon receipt of any such notice of termination of this Agreement from the Owner, pursuant to Sections 19.1.1 or 19.1.4 hereof, and as a condition precedent to the Owner's obligation to make any of the aforesaid payments to the Construction Manager required under Section 19.1.4 hereof, the Construction Manager shall:

a. Stop performing all Services under this Agreement on the date, and to the extent specified, in the notice of termination;

b. Not enter into any further Subcontracts;

c. At the option of the Owner, the Construction Manager shall assign to the Owner or any of its Affiliates or any contractor, construction manager or other person or entity designated by the Owner, all of the Construction Manager's right, title and interest in, to and under those Subcontracts designated by the Owner. Simultaneously with any such assignment, and to be memorialized in the assignment instrument, the Owner shall assume the obligations of the Construction Manager under such Subcontracts from and after the effective date of such assignment. Following the effective date of such assignment, the Construction Manager shall have no further liability under such Subcontracts and purchase orders other than with respect to matters which occurred prior to such effective date;

d. Except with respect to those Subcontracts assigned to the Owner pursuant to subsection (c) of this Section 19.1.5, or unless otherwise directed by the Owner, terminate the Subcontracts entered into by the Construction Manager in connection with the Project to the extent that they relate to portions of the Project to be performed subsequent to the date set forth in the notice of termination as the date upon which such termination shall become effective;

e. To the extent required by the Owner and subject to the prior approval of the Owner, use its best efforts to settle, at the Owner's sole cost and expense and at no cost to the Construction Manager, all outstanding liabilities and all valid claims arising out of such termination of Subcontracts, which approval by the Owner shall be final for all the purposes of this Article 19;

f. Transfer title to the Owner in and to, unless already vested in the Owner, and deliver in the manner, at the time, and to extent, if any, directed by the Owner, fabricated or unfabricated parts, work in process, completed Work, supplies, and other material and equipment produced as a part of, or acquired in connection with the performance of, the Work; and all of the documents, materials and other items described in Article 9 hereof;

g. If requested by the Owner, and at the Owner's sole cost and expense, use its best efforts to sell, in the manner, at the times, to the extent, and at the price or prices directed or authorized by the Owner, any property of the types referred to herein, provided, however, that the Construction Manager shall not be required to extend credit to any purchaser, and may acquire any such property under the conditions prescribed, and at a price or prices approved, by the Owner; and provided, further, that the proceeds of any such transfer or disposition shall be applied in reduction of any payments

to be made by the Owner to the Construction Manager under this Agreement or shall otherwise be credited to the Cost of the Work or paid in such other manner as the Owner may direct;

h. Complete performance of such part of the Project as shall have been specified in the notice of termination to be completed by the Construction Manager prior to the effective date of such termination; and

i. Prior to the effective date of such termination, take such action as may be necessary, or as the Owner may direct, for the protection and preservation of the property related to the Work and/or the Project which is in the possession of the Construction Manager and in which the Owner has or may acquire an interest, the cost of which shall be considered as a part of the Cost of the Work.

19.1.6 In the event of a termination of this Agreement pursuant to this Article 19 and subject to the Owner's right to withhold payments to the extent permitted under the terms of this Agreement, the Construction Manager shall be paid by the Owner for the actual costs incurred by the Construction Manager in the performance of Services for the Project up to the date of termination and for all materials, supplies and equipment incorporated in the Project and/or stored at the Project Site or at such off-site storage locations as shall have been approved by the Owner in accordance with the provisions of this Agreement, it being understood that the Construction Manager shall not be entitled to recover anticipated profits on account of the Base Fee and/or the General Conditions Costs or the anticipated profits of Subcontractors for portions of the Work unperformed or for materials or equipment unfurnished, nor for reimbursement for losses arising out of matters covered by insurance.

19.2 Termination by Construction Manager

19.2.1 The Construction Manager shall have the right to terminate this Agreement upon seven (7) days written notice and opportunity to cure to the Owner in the event any of the undisputed amounts due to the Construction Manager remain unpaid for more than thirty (30) days after the date the same becomes due hereunder, and then only if the amount remaining unpaid shall not have been paid to the Construction Manager by the end of such seven (7) day period and provided the delay in payment is not due to the Construction Manager or its Subcontractors.

19.2.2 The sole liability of the Owner to the Construction Manager under this Agreement or otherwise, subject to full and complete performance by the Construction Manager of its obligations under this Agreement, shall be payment of the monies payable hereunder, and the Owner shall have no liability to the Construction Manager for damages or charges of any kind.

ARTICLE 20 - SUSPENSION OF WORK

20.1 Suspension by the Owner

20.1.1 The Owner may, at any time and for any reason, direct the Construction Manager to suspend the Project or any part thereof. Such direction shall be in writing and shall specify the period of such suspension and the reasons for such suspension. The Construction Manager shall resume the performance of the Work upon the date specified in such directive or upon such other date as the Owner may thereafter specify in writing. In such case, if such suspension materially delays the performance of any portion of the Work so that the Construction Manager will not be able to achieve any Milestone Event, the Construction Manager shall be entitled to an extension of such Milestone Event and the Project Schedule for the number of days of such material delay.

20.1.2 If such suspension is for a period in excess of thirty (30) days in the aggregate, the Construction Manager shall be entitled to a Change Order for (a) actual additional General Conditions Costs incurred by reason of such suspension beyond such thirty (30) days, and (b) an increase in the Direct Work Cost in the amount by which the same actually increased by reason of such suspension beyond such thirty (30) days, provided that the Construction Manager uses commercially reasonable efforts to mitigate all such costs and demonstrates any such actual costs incurred to the reasonable satisfaction of the Owner, but no other form of reimbursement or compensation or adjustment to the Base Fee or the Cost of the Work amount set forth in the Budget shall be made, nor shall the Construction Manager be entitled to any damages for such suspension, including so-called "Eichleay damages."

20.1.3 In the event of any such suspension, the Construction Manager shall, as part of its demobilization activities, secure the Project Site and protect the Work in such a manner that will best preserve the safety and security of the Project Site and the condition of the Work.

20.2 Suspension by the Construction Manager

20.2.1 If the Owner fails to make any payments due to the Construction Manager hereunder, without cause, then the Construction Manager may, subject to fulfillment of the conditions contained in the following sentence, suspend the Work. Notwithstanding the foregoing sentence, the Construction Manager shall not be entitled to suspend the Work upon such failure unless (i) the Construction Manager shall have promptly furnished the Owner with notice of such failure which also states the Construction Manager's intention to suspend the Work if the Owner fails to remedy such failure within ten (10) days after the Owner's receipt of such notice, and (ii) the Owner fails to remedy such failure within such ten (10) day period. If such suspension then leads to termination of this Agreement by the Construction Manager in accordance with the terms hereof, the Construction Manager shall be entitled to recover, as its sole and exclusive remedy, the Cost of the Work plus a pro rata portion of the Base Fee associated with Work performed to the date of such termination and the actual reasonable demobilization costs incurred by the Construction Manager.

ARTICLE 21 - PROPRIETARY INFORMATION

21.1 Proprietary Information.

21.1.1 The Construction Manager hereby irrevocably assigns to the Owner, its successors and assigns, and the Owner shall have, exclusive ownership rights, including, without limitation, all patent, copyright and trade secret rights, with respect to any Proprietary Information. All Proprietary Information shall be the property of the Owner and be considered a work made for hire and shall not be used by the Construction Manager for any purpose other than for the benefit of the Owner; provided, however, the Owner grants the Construction Manager a limited license to use and reproduce applicable portions of the Proprietary Information for use in the execution of the Work, defending itself in any litigation arising from the Work, enforcing any warranty relating to the Work or correcting defective Work, or as may otherwise be reasonably required to protect the Construction Manager's interests with respect to the Work. The Construction Manager shall cooperate fully with the Owner to establish, protect and confirm the Owner's exclusive rights in the Proprietary Information and to enable the Owner to transfer legal title thereto. Upon the expiration or earlier termination of this Agreement or, at any time, upon the Owner's request, the Construction Manager shall promptly deliver to the Owner all materials containing or derived from Proprietary Information, and all other documents (hard copy or electronic) and materials obtained from, relating to, or developed in the course of performing the Work which are then in possession or control of the Construction Manager. A certificate evidencing compliance with this provision shall, if requested, be provided to the Owner. The Proprietary

Information is not intended or represented to be suitable for reuse by the Owner or others on additions to the Project or on any other project. Any such reuse or modification without written verification or adaptation by the Construction Manager, as appropriate for the specific purpose intended, will be at the Owner's sole risk and without liability. Notwithstanding anything contained in this Section 21.1 to the contrary, the foregoing assignment shall not include any (i) inventions created by the Construction Manager in the course of performing the Work that have applications to projects other than the Project or (ii) any inventions created by the Construction Manager prior to the commencement of the Work even if the same were modified or enhanced in the course of performing the Work; provided, however, in no event shall the Construction Manager be entitled to charge the Owner any royalties or other compensation arising from the use of any such invention in connection with the Project and the Owner shall have the right, at any time, to utilize such inventions in connection with any project other than the Project without payment to the Construction Manager of any royalties or other compensation.

21.2 Confidentiality and Publicity

21.2.1 The Construction Manager acknowledges that the Construction Manager or the Construction Manager's Representatives, in the course of performing the Work, may be exposed to or acquire Confidential Information which is proprietary or confidential to the Owner or its Affiliates or its or their respective clients, or to third parties to whom the Owner owes a duty of confidentiality. The Construction Manager shall hold the Confidential Information in strict confidence and not copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give or disclose any Confidential Information to third parties or use any Confidential Information for any purpose whatsoever other than the performance of the Work or as may be necessary in connection with an application for a permit, approval or clearance by any governmental authority, and shall advise each of the Construction Manager's Representatives and Subcontractors who may be exposed to the Confidential Information of their obligations to keep such information confidential.

21.2.2 The Construction Manager shall include a clause identical to this Section 21.2 in all Subcontracts and other agreements regarding the performance of the Work.

21.2.3 The Construction Manager and the Construction Manager's Representatives and Subcontractors shall not, without the prior written consent of the Owner in each instance, (a) name or refer to the Project for promotional purposes or otherwise, (b) promote, advertise or publicize the Construction Manager's role or involvement with the Project, (c) use in advertising, publicity, brochures, portfolios or otherwise any photograph of the Project or any part thereof or of any employee of the Owner, or the name of the Owner, any Affiliate of the Owner, or any partner, managing director, director, member, officer or employee of the Owner or any such Affiliate, or any trade name, trademark, trade device, service mark or symbol, or any abbreviation, contraction or simulation thereof, owned by the Owner, or any of its Affiliates, or (d) represent, directly or indirectly, that any product or any service provided by the Construction Manager has been approved or endorsed by the Owner or any Affiliate of the Owner, or any partner, managing director, director, member, officer or employee of the Owner, or any of their Affiliates. In addition to the foregoing restriction on the use of photographs, the Construction Manager shall not use any photograph of the Project or any part thereof unless the Construction Manager and the Owner shall have first executed and delivered an agreement, in the form required by the Owner, governing the use of all such photographs on such terms and conditions as the Owner may require.

21.2.4 The Construction Manager shall not publicize, disclose or allow disclosure of any information about the Project, the Owner or any Affiliate of the Owner, their present or former partners, members, managing directors, directors, officers, employees, agents or clients, its or their business or financial affairs, personnel matters, operating procedures, organization responsibilities, marketing

matters or policies or procedures, to any reporter, author, producer or similar person or entity, or take any other action seeking to publicize or disclose any such information in any way likely to result in such information being made available to the general public in any form, including books, articles or writings of any other kind, or through any medium, including film, videotape, audiotape, television, radio or the internet. The foregoing shall not be deemed to preclude the Construction Manager, after Final Completion, from including a general reference to the Project in its response for proposals seeking background information on the Construction Manager, provided that the Construction Manager obtains the Owner's prior approval.

21.2.5 In the event that the Construction Manager receives a request to disclose all or any part of any Confidential Information under a subpoena or inquiry issued by a court of competent jurisdiction or by a judicial or administrative agency or legislative body or committee, the Construction Manager shall (a) immediately notify the Owner of the existence, terms and circumstances surrounding such request, (b) consult with the Owner on the advisability of taking legally available steps to resist or narrow such request and cooperate with the Owner in any such steps that the Owner considers advisable in order to resist or narrow such request, and (c) if disclosure of the Confidential Information is required or deemed advisable, exercise its best efforts to obtain an order, stipulation or other reliable assurance reasonably acceptable to the Owner that confidential treatment will be accorded to such portion of the Confidential Information to be disclosed.

21.2.6 The Construction Manager acknowledges that a breach of the Construction Manager's obligations under this Article 21 may cause irreparable harm to the Owner and that there may be no adequate remedy at law available to the Owner by reason of such breach. Accordingly, the Owner shall be entitled to injunctive relief to restrain any such breach, whether threatened or actual.

21.2.7 The Construction Manager shall not show the Project in any stage for any purpose, including promotional purposes, without the prior written consent of the Owner.

21.2.8 The provisions of this Article 21 shall survive Final Completion of the Project and any termination or expiration of this Agreement.

21.2.9 The Construction Manager shall review the terms and conditions of this Agreement with any Subcontractor it might retain in the performance of the Work, and shall use all commercially reasonable efforts to obtain the written agreement of such Subcontractor to comply with the terms of this Article 21.

ARTICLE 22 - MISCELLANEOUS PROVISIONS

22.1 Assignment

22.1.1 The Construction Manager shall not assign or transfer this Agreement or any of its rights or obligations hereunder or any monies due or to become due hereunder, or delegate any of its duties hereunder, or subcontract any portion of the Work, without in each instance obtaining the prior written consent of the Owner. Subject to the provisions of Article 8 hereof, the Construction Manager may subcontract portions of the Work to Subcontractors, at its sole cost and expense. No consent to any such assignment or transfer, and no approval of any Subcontractor, shall under any circumstances operate to relieve the Construction Manager of any of its obligations under this Agreement.

22.2 Royalties and Patents

22.2.1 The Construction Manager shall pay all royalties and license fees identified as required in the Contract Documents. The Construction Manager shall defend suits or claims for infringement of any patent rights and shall hold the Owner, the Owner's Representative and the Design Professionals harmless from loss on account thereof, but the Construction Manager shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or substituted by the Construction Manager in lieu of that required by the Contract Documents if such substitution was approved in writing by the Owner. However, if the Construction Manager has reason to believe that the required design, process or product is an infringement of a patent, the Construction Manager shall be responsible for such loss unless such information is promptly furnished to the Owner, the Owner's Representative and the Design Professionals.

22.3 Affiliations with Subcontractors:

22.3.1 The Construction Manager shall disclose to the Owner any affiliation, whether due to ownership, personal relationships, or otherwise, between the Construction Manager and any Subcontractors or prospective Subcontractors. Such disclosures shall be made prior to the Construction Manager making any commitment to retain any such Subcontractor.

22.4 Assignment by the Owner

22.4.1 The Owner shall have the right to assign this Agreement, without the Construction Manager's consent, to (a) any Affiliate of the Owner, (b) any person or entity which succeeds to all or substantially all of the Owner's assets and business, or (c) the Owner's lender, provided that any such assignment does not increase the Construction Manager's obligation or liability under this Agreement. Upon any such assignment, and the assumption by the assignee thereunder of the Owner's obligations under this Agreement, the Owner shall be deemed to be released from any and all liability under this Agreement, except that the Owner shall not be released from liability to the extent of its failure to make all undisputed payments to the Construction Manager and to the extent of its withholding of disputing payments from the Construction Manager, provided that the Construction Manager reserves its rights against the Owner to the extent of such disputed amounts.

22.5 Governing Law; Choice of Forum

22.5.1 This Agreement and all matters arising in connection with this Agreement shall be governed in all respects by, and construed and enforced in accordance with, the laws of the State of California, without giving effect to principles of conflicts of law. The Construction Manager irrevocably consents that any action or proceeding arising out of or connected in any way with this Agreement shall take place in a state or federal court of competent jurisdiction in the County of Los Angeles, City of Los Angeles and State of California. The parties hereby waive trial by jury in any such action or proceeding. There shall be no consolidation of actions or proceedings or joinder of issues that would result in the removal of the applicable action or proceeding from the court hereinabove provided. If the Construction Manager challenges such jurisdiction and such challenge is denied or otherwise withdrawn, the Construction Manager shall reimburse to the Owner, upon demand, the reasonable attorney's fees and expenses incurred by the Owner in connection with such challenge.

22.6 Protection of Lenders

22.6.1 Upon receipt of notice from any mortgagee setting forth its status as a mortgagee encumbering all or any portion of the Project and setting forth its address for receipt of notices, the Construction Manager agrees that the Construction Manager shall give to each mortgagee providing such notice (or its agent, as it may request), at the address of such mortgagee (or agent) set forth in such notice (as the same may subsequently be updated by notice from such mortgagee to the Construction Manager) in the manner set forth herein, a copy of each notice of any claimed default hereunder (or other notice which would permit the Construction Manager to cease providing the Services hereunder or otherwise stop work on the Project) at the same time as such notice is given to the Owner. No such notice shall be deemed to have been duly given to the Owner unless and until a copy thereof shall have been duly given to each such mortgagee (or its agent, as it may request).

22.6.2 Each mortgagee (or its agent) shall have a period of thirty (30) days more than given to the Owner for remedying any default (or other failure which, if not cured, would permit the Construction Manager, after any applicable grace period, to cease providing Services hereunder or otherwise stop work on the Project) or causing the same to be remedied, prior to the Construction Manager exercising any remedies as a result thereof; provided that nothing set forth in this Section 22.6.2 shall modify or negate the Construction Manager's right to suspend the Work for non-payment of an undisputed amount. If such default (or other failure described above) shall be curable, but requires more than the thirty (30) day period described above, such mortgagee shall have such additional time period as is reasonably required to remedy the same, or cause the same to be remedied, provided such mortgagee shall notify the Construction Manager that it requires such additional time to cure and proceeds with reasonable diligence to remedy the same, or cause the same to be remedied. Nothing herein shall obligate any mortgagee to remedy any default (or other failure described above) and a mortgagee shall be permitted at any time to discontinue any attempted remedy it may be pursuing. The Construction Manager shall accept performance by a mortgagee of any covenant, condition or agreement on the Owner's part to be performed hereunder with the same force and effect as though performed by the Owner. The Construction Manager shall permit such mortgagee or its agent (or their contractors) access to the Project in order to effectuate the same.

22.6.3 No modification or amendment of this Agreement (nor any waiver by the Owner of any of its material rights and remedies hereunder) shall be effective or enforceable as against any mortgagee who has given notice of its mortgage in accordance herewith prior to the date of such modification or amendment (or waiver), unless such mortgagee has given its written consent to such modification or amendment. The Owner and the Construction Manager shall not voluntarily terminate or cancel this Agreement (without the prior written consent of any mortgagee who has given notice of its mortgage in accordance herewith prior to the date of such termination or cancellation), except for any termination expressly contemplated or provided for by this Agreement.

22.7 Notices

22.7.1 All Notices shall, unless expressly provided otherwise in this Agreement, be in writing and delivered by hand, overnight courier, or registered or certified mail, return receipt requested. Notices to the Owner shall be sent to: Calmart Sub I, LLC, c/o Brookfield Properties, Figueroa at Wilshire, 601 S. Figueroa Suite 2200, Los Angeles, California, 90017, Attn: Peter Davidson, with a copy to Mark Phillips, and a copy to Troutman Sanders LLP, 875 Third Avenue, New York, New York 10174, Attn: Aaron Abraham, Esq. Notices to the Construction Manager shall be sent to: Turner Construction Company, 1900 South State College Blvd, Suite 200, Anaheim, California 92806, Attn: Kevin Dow. A Notice sent by overnight courier shall be deemed given on the next business day after the day such Notice is delivered to the overnight courier. A Notice sent by registered

or certified mail shall be deemed given on the third business day after mailing. Either party may change its address for Notices by sending a Notice thereof to the other party in accordance with this Section 22.7. Attorneys for each party are hereby authorized to sign Notices on behalf of such party.

22.8 No Waiver

22.8.1 No consent or waiver, express or implied, by either party to this Agreement of any breach or default by the other in the performance of any obligations hereunder shall be deemed or construed to be a consent or waiver to or of any other breach or default by such party hereunder. Unless the Contract Documents specify a time period for notice of a particular claim, failure on the part of any party hereto to complain of any act, omission or breach of the other party or to declare the other party in default hereunder, irrespective of how long such failure continues, shall not constitute a waiver of the rights or remedies of such party or obligations or liability of such other party hereunder. Inspection of the Work or failure of the Owner to perform any inspection hereunder shall not release the Construction Manager of any of its obligations hereunder.

22.8.2 The failure of the Owner to insist upon the strict performance of any provision of this Agreement, or the failure of the Owner to exercise any right, option or remedy hereunder, shall not be construed as a waiver of any such provision, right, option or remedy or as a waiver of any breach thereof. The consent or approval by the Owner or the Design Professionals of any act by the Construction Manager requiring such consent or approval shall not be construed to waive or render unnecessary the requirement for such consent or approval of any subsequent similar act by the Construction Manager. The payment by the Owner of any amount due hereunder with knowledge of a breach of any provision of this Agreement shall not be deemed a waiver of such breach nor preclude the Owner's subsequent recovery of damages arising from such breach. No waiver, modification or amendment of any term, condition or provision of this Agreement shall be valid or of any force or effect unless made in writing and signed by the party to be charged therewith. The signing of such writing or writings in any instance or instances shall in no event be construed to constitute a general waiver, abandonment, modification or amendment of any of the terms, conditions or provisions of this Agreement, but the same shall be strictly limited and restricted to the extent and occasion specified in such signed writing or writings. Any law, usage or custom to the contrary notwithstanding, each party shall have the right at all times to enforce all terms, conditions and covenants hereof in strict accordance herewith, notwithstanding any conduct or custom on the part of either party in refraining from so doing at any other time or times.

22.9 Entire Agreement; Amendments

22.9.1 This Agreement and the documents incorporated herein by reference constitute the entire understanding of the parties concerning the subject matter hereof and thereof and supersede any and all prior representations and prior negotiations and written or oral agreements between them related to such subject matter, including any request for proposal issued by the Owner or any proposal submitted by the Construction Manager in connection with the Project. This Agreement may not be amended or modified orally but only by an instrument signed by the party to be charged with enforcement thereof.

22.10 Signs

22.10.1 The Owner shall have the right to place at the Project Site such signs as it may elect. The Construction Manager shall not display on or about the Project Site any sign, trademark or other advertisement, except those signs required by Applicable Laws and, with respect to those required

signs, the same shall be of a size required by such Applicable Laws or, if no size is so required, the size of such signs shall be subject to the Owner's prior written approval.

22.11 Third Party Beneficiaries

22.11.1 The Owner and the Construction Manager specifically acknowledge and agree that it is their intention that (a) the Services contemplated by this Agreement be made available to the Affiliates of the Owner (in addition to the Owner itself), and (b) the Affiliates of the Owner are third party beneficiaries of this Agreement, entitled to enforce the terms and conditions of this Agreement. Except as provided in the immediately preceding sentence or in any indemnification or other provision in this Agreement that benefits the Indemnitees, or as otherwise expressly provided in this Agreement, no provision contained in this Agreement shall confer any benefit upon or grant any rights to any third parties nor give to third parties (in either case, other than the Owner's lender) any claim or right of action beyond such as may legally exist in the absence of any such provision.

22.12 Severability

22.12.1 If any provision of this Agreement is determined to be invalid or unenforceable as against any person or party, the remainder of this Agreement and the applicability of such provision to other persons or parties shall not be affected thereby. Each provision of this Agreement shall, except as otherwise herein provided, be valid and enforceable to the fullest extent permitted by law.

22.13 Rights and Remedies

22.13.1 The duties and obligations imposed by this Agreement and the rights and remedies available hereunder shall be in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available at law or in equity. Any reference in this Agreement to a specific right or remedy shall not be construed as limiting the Owner from exercising any other right or remedy it might have, under this Agreement or at law or in equity.

22.14 Non-Liability

22.14.1 In no event shall any members, partners, officers, shareholders, directors, managing directors, employees or Affiliates of either Party have any liability to the other Party under this Agreement or otherwise.

22.15 Independent Contractor

22.15.1 The Construction Manager is acting as an independent contractor for all purposes under this Agreement and it is solely responsible for its actions or inactions. No documents, actions or assertions shall be construed to create a partnership, joint venture or other like relationship between the Owner and the Construction Manager. The Construction Manager is not authorized to enter into any contracts or agreements on behalf of the Owner or to otherwise create any obligations of the Owner to third parties.

22.16 Survival

22.16.1 All representations, warranties and indemnities contained in this Agreement, the Construction Manager's obligations to perform all of the Services and all covenants to be performed subsequent to the Final Completion of the Work or the expiration or termination of this Agreement shall survive Final Completion of the Work and the expiration or termination of this Agreement.

22.17 Prior Performance of the Work

22.17.1 The parties acknowledge that, prior to the execution of this Agreement, the Construction Manager and the Owner may have performed certain of the obligations included within the scope of this Agreement, including the payment of certain sums of money by the Owner to the Construction Manager. Notwithstanding such performance, it is the intention of the parties that such obligations be included in and governed by the terms of this Agreement.

22.18 Statute of Limitations

22.18.1 Notwithstanding any provisions of the Contract Documents to the contrary, no applicable statute of limitations shall be deemed to have commenced with respect to any portion of the Work which is not in accordance with the requirements of the Contract Documents, which would not be visible or apparent upon conducting a reasonable investigation and which is not discovered by the Owner until after the date which, but for this Section 22.18.1, would be the date of commencement of the applicable statute of limitations; the applicable statute of limitations instead shall be deemed to have commenced on the date of such discovery by the Owner.

22.19 Successors and Assigns

22.19.1 This Agreement shall be binding upon, and inure to the benefit of, the parties hereto and their respective successors and permitted assigns.

22.20 Captions

22.20.1 Captions and titles of the different Articles and Sections in this Agreement are solely for the purpose of aiding in the location of provisions in this Agreement and are not to be considered under any circumstances as parts, provisions or interpretations of this Agreement.

22.21 Covenants

22.21.1 Whenever in this Agreement any words of obligation or duty regarding any party are used, they shall have the same force and effect as those in the form of an express covenant.

22.22 Owner's Sole and Absolute Discretion

22.22.1 Except as otherwise expressly stated to the contrary in this Agreement, whenever any action or determination is required to be made or taken, as the case may be, by the Owner, or the consent, approval or satisfaction of the Owner is required, the making or taking of such action or determination or the granting or withholding of such consent, approval or satisfaction, as the case may be, shall be made, taken, granted or withheld by the Owner in its sole and absolute discretion.

22.23 Conflicts of Interest

22.23.1 The Construction Manager hereby warrants that it does not now and will not during its performance of the Services have any direct or indirect proprietary or other interest in (a) any patent, system, method, plan or design of construction or in any building procedures that will be recommended or used in the Drawings and Specifications or any other documents for the Project, or (b) any manufacture or fabrication of any materials to be recommended or specified for use in the Project. The Construction Manager further agrees, for itself, its shareholders or members (in the case of closely-held entities), officers, directors, employees, subsidiaries, affiliates, successors and assigns that none of them

now have or will hereafter acquire any interest in any Subcontractor which is awarded a Subcontract for Work on the Project without the Owner's prior written informed consent and that for a period of one (1) year after the Final Completion of the Work, there shall be no transfer of any interest in the Construction Manager to any such Subcontractor.

22.24 No Prejudice to Drafter

22.24.1 This Agreement is the product of negotiations between the parties and there shall be no presumption construing any provision herein or in the Contract Documents against either party as the purported drafter of such provision.

22.25 Construction of Terms

22.25.1 The language in this Agreement and the other Contract Documents shall be construed according to its customary meaning within the local construction industry. Technical terms not specifically defined in the Contract Documents shall have the meanings given in AIA Document M103, "Glossary of Construction Industry Terms." Technical terms not defined as above and used to describe items of the Work and as so used have a well known technical or trade meaning, shall be held to have such recognized meaning. The Contract Documents may omit modifying words such as "all" and "any" and articles such as "the" and "an", but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement. Where "as shown," "as indicated," "as noted" and similar terms are used, it shall be understood that reference to the Drawings is made, unless their use in a sentence clearly implies a different interpretation. Where the term "product," "products," "item," "items" and similar terms are used they shall be understood to include materials, systems and equipment, as applicable. Whenever used, the singular number shall include the plural, and the plural the singular, and the use of any gender shall be applicable to all genders. In all cases where a material, assembly, device, item or part of equipment is referred to in the singular number, it is intended that such reference shall apply to as many such materials, assemblies, devices, items or parts of equipment as are indicated or required to complete the Work. In all instances where a number of days is stated, such days shall be considered "calendar days" unless otherwise expressly set forth to the contrary. The words "include" or "including" shall be construed as though they were followed by the words "without limitation" or "but not limited to" or words of similar import or meaning. The words "herein", "hereof", "hereunder" and other similar compounds of the words "here" when used in this Agreement shall refer to the entire Agreement, including the Exhibits attached hereto, and not to any particular provision or section unless the context requires otherwise.

22.26 Capitalized Terms

22.26.1 Terms capitalized in this Agreement shall have the definitions stated herein, or if not defined herein, shall have the definition stated in the Exhibits attached hereto.

22.27 Execution of this Agreement

22.27.1 It is expressly understood by the parties that delivery by the Owner of this Agreement for review or execution by the Construction Manager shall confer no rights nor impose any obligations on either party, unless and until both the Owner and the Construction Manager shall have executed this Agreement and duplicate originals thereof shall have been delivered to the respective parties hereto.

22.28 Counterparts

22.28.1 This Agreement may be executed in two or more counterparts, each of which shall constitute an original but all of which together shall be deemed one and the same instrument.

22.29 Mutual Waiver of Consequential Damages

22.29.1 Except with respect to claims arising out of the Construction Manager's gross negligence or willful misconduct or claims related to third party claims for personal injury or property damage or claims covered by the Construction Manager's insurance, the Construction Manager and the Owner waive claims against each other for consequential damages arising out of or relating to this Agreement. This mutual waiver includes by way of example and not limitation the following:

a. Damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

b. Damages incurred by the Construction Manager for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Services performed pursuant to this Agreement.

22.29.2 This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination or default in accordance with this Agreement. Nothing contained in this Section 22.29 shall be deemed to preclude an award of direct damages, when applicable, in accordance with the terms of this Agreement.

22.30 Whereas Clauses

22.30.1 The recitals set forth in the whereas clauses of this Agreement are a material part of this Agreement and binding on the parties thereto.

[The remainder of this page has been intentionally left blank]

This Agreement is entered into as of the date and year first above written.

CALMART SUB I, LLC

By: 
Name: Thomas Diamond
Title: SVP

TURNER CONSTRUCTION COMPANY


By: 
Name: Kevin Dow
Title: Vice President & General Manager

Exhibit A

Project Site

PARCEL A:

ALL OF TRACT NO. 18199, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON MAP RECORDED IN BOOK 461, PAGES 3 AND 4 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL B:

LOTS 2, 3, 4, 5 AND THOSE PORTIONS OF LOTS 1, 6 AND 7 IN BLOCK 2 OF THE HAMMEL AND DENKER TRACT, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 53 PAGE 63 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY AND THAT PORTION OF LOT 1 IN BLOCK 1 OF THE O. W. CHILD'S TRACT, IN SAID CITY, COUNTY AND STATE, AS PER MAP RECORDED IN BOOK 5 PAGE 355 OF MISCELLANEOUS RECORDS OF SAID COUNTY, DESCRIBED AS A WHOLE AS FOLLOWS:

BEGINNING AT THE MOST EASTERLY CORNER OF LOT 2 IN SAID BLOCK 2 OF THE HAMMEL AND DENKER TRACT; THENCE ALONG THE NORTHEASTERLY LINE OF SAID LOT 2 AND ITS NORTHWESTERLY PROLONGATION, NORTH 37 DEGREES 35 MINUTES 35 SECONDS WEST 214.83 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 850.00 FEET; THENCE NORTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 7 DEGREES 58 MINUTES 07 SECONDS, AN ARC DISTANCE OF 118.22 FEET TO THE NORTHWESTERLY LINE OF LOT 1 IN SAID BLOCK 2 OF THE HAMMEL AND DENKER TRACT; THENCE ALONG THE NORTHWESTERLY LINE OF SAID HAMMEL AND DENKER TRACT SOUTH 52 DEGREES 15 MINUTES 55 SECONDS WEST 180.09 FEET; THENCE LEAVING SAID NORTHWESTERLY LINE, SOUTH 34 DEGREES 00 MINUTES 30 SECONDS WEST 97.39 FEET; THENCE SOUTH 55 DEGREES 43 MINUTES 35 SECONDS EAST 150.21 FEET; THENCE NORTH 33 DEGREES 51 MINUTES 30 SECONDS EAST 48.78 FEET; THENCE SOUTH 47 DEGREES 31 MINUTES 06 SECONDS EAST 17.82 FEET; THENCE NORTH 51 DEGREES 25 MINUTES 36 SECONDS EAST 54.77 FEET TO THE NORTHWESTERLY PROLONGATION OF THE NORTHEASTERLY FACE OF THE NORTHEASTERLY WALL OF A 13 STORY BUILDING; THENCE ALONG SAID PROLONGATION TO AND ALONG SAID NORTHEASTERLY FACE, SOUTH 42 DEGREES 35 MINUTES 27 SECONDS EAST 160.22 FEET TO THE SOUTHEASTERLY LINE OF LOT 6 IN SAID BLOCK 2 OF THE HAMMEL AND DENKER TRACT; THENCE ALONG THE SOUTHEASTERLY LINE OF SAID HAMMEL AND DENKER TRACT, NORTH 51 DEGREES 25 MINUTES 36 SECONDS EAST 115.94 FEET TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THOSE PORTIONS OF LOTS 4 AND 6 IN BLOCK 2 OF THE HAMMEL AND DENKER TRACT, AS PER MAP RECORDED IN BOOK 53 PAGE 63 OF MISCELLANEOUS RECORDS IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT IN THE WESTERLY LINE OF LOS ANGELES STREET, DISTANT 116.5 FEET SOUTHERLY FROM THE SOUTHWEST CORNER OF TENTH AND LOS ANGELES STREETS AND RUNNING THENCE NORTHEASTERLY AND ALONG THE WESTERLY LINE OF SAID LOS ANGELES STREET, 41.5 FEET TO A POINT; THENCE NORTHWESTERLY AND ON A LINE PARALLEL WITH THE SOUTHERLY LINE OF TENTH STREET 160 FEET TO A POINT IN THE WESTERLY LINE OF SAID LOT 4; THENCE SOUTHWESTERLY AND ALONG WESTERN BOUNDARY LINES OF SAID LOTS 4 AND 6, 54.9 FEET TO A POINT; THENCE EASTERLY 160.97 FEET MORE OR LESS TO THE POINT OF BEGINNING.

EXCEPT THEREFROM LOT 2 AND THE NORTH 25 FEET OF LOT 4 IN BLOCK 2 OF THE HAMMEL AND DENKER TRACT, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 53 PAGE 63 OF MISCELLANEOUS RECORDS IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

Exhibit B

Description of Project

The intent of the re-development strategy for the Calmart property is to create more attractive office and retail environments. The re-development will focus on the creation of active street level retail that incorporates and rehabilitates the exiting plaza and “Pad Building”. The new retail is envisioned to include food and beverage offerings that will encourage indoor/outdoor circulation between the plaza, the atrium and the retail. The existing atrium and adjacent retail spaces are to be renovated into an active social space that will become the focal point of the complex.

The existing Mart tenants will be consolidated and re-stacked within Building C to achieve a more effective Mart experience. This relocation of existing tenants will in turn provide the ability to create large blocks of traditional office space on floors 3 to 13 in Buildings A and B.

The Site occupies the full block between east Olympic Boulevard and East 9th Street and between South Main Street and South Los Angeles Street. The building is approximately 1.84 M square feet.

Building area includes four (4) buildings: Building A (762,600 SF), Building B (462,500 SF), Building C (587,600 SF), and the “Pad Site” (24,500 SF).

Exhibit C

Staffing Plan/Key Personnel

Exhibit C – Staffing Plan/Key Personnel

Staff Member	Staff Role	Billing Rate
Adamo, Nino	Project Executive	\$189.00
Alday, Jose	Project Manager	\$159.00
Kini, Rinku	Chief Estimator	\$88.00
Brenson, Steve	Sr. Project Superintendent	\$160.00
Sistrunk, Daniel	VDC Manager	\$92.00
Hernandez, Gabriel	VDC Engineer	\$92.00
Forster, BreeAnne	Project Engineer	\$69.00
Fischer, Zach	Project Engineer	\$97.00
Arumugam, Kavitha	Project Engineer	\$69.00
Salguero, Richard	Procurement Agent	\$90.00
Turner, Lauren	Cost Engineer	\$80.00
Khan, Mohammad	Project Accountant	\$68.00
Sriram Ramdass	Sr. Project Scheduler	\$141.00

Exhibit D

Access and Building Security Plan

Brookfield

California Market Center
110 E. Ninth St, Ste A727
Los Angeles, CA 90079

Tel (213) 630-3600
Fax (213) 630-3708

email: gabby.garcia@brookfield.com
email: eric.kim@brookfield.com

Vendor Access Request

Tenant Name: _____ Company / Vendor Name: _____
Tenant Contact Person: _____ Primary Contact / Phone: _____
Access To Floor(s): _____ Date & Time (Start/End): _____
Freight Elevator(Lg/Sm): _____ Freight Reservation
(Start/End): _____

**Reservation of a freight elevator requires an operator and will be charged per standard billing rates.*

Type of work being performed / Special Instructions

Support Services Required (Please indicate time and dates)

Sprinkler Valve Shutdown: _____	Roof Access: _____
Fire Alarm Control: _____	Mechanical Room Access: _____
Hot Work Permit: _____	Electrical Room Access: _____
Building Engineer: _____	Telephone Closet Access: _____
Building Security: _____	Special Cleaning: _____

Note: Noise generating work will be completed off hours (6:00 pm- 6:00 am)

Tenant or Approved Signature: _____ Date: _____

For Brookfield Use Only

Brookfield Comments: _____ _____		
Insurance on file: Yes: _____	No: _____	
Approved By: _____	_____	_____
Security	Engineering	Management

Valid COI must be on file with management office, requirements available upon request
Remit to Brookfield Management 24 hours in advance

EMERGENCY PROCEDURES

OCCUPANT

California Market Center

**110 East Ninth Street
Los Angeles, California 90079**

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Prepared By



www.buildingsafety solutions.com

INTRODUCTION

This booklet has been compiled by California Market Center management personnel in cooperation with Building Safety Solutions and the Los Angeles Fire Department to help enhance the safety of building occupants in the event of an emergency, as well as to comply with the provisions of the California Code of Regulations, Title 19 ("CCR Title 19"), the Los Angeles Municipal Code, and the Los Angeles Fire Code.

The material in this manual pertaining to CCR Title 19, the Los Angeles Municipal Code, and the Los Angeles Fire Code is required by law. Additional procedures included in this manual concerning emergencies such as bomb threats and medical emergencies are recommendations only and/or included at the request of building management. For further legal requirements and information regarding such situations, refer to the appropriate agency.

The provisions of Sections 3.09 and 3.10 of Article 3, Subchapter 1, Chapter 1, Title 19 of the California Code of Regulations requires that persons responsible for new and existing high-rise buildings comply with the emergency pre-fire planning and evacuation requirements as set forth therein. Owners, managers, operators, administrators, and tenants of each high-rise building in the City of Los Angeles shall comply with these requirements or be subject to prosecution and penalties, including fines, as set forth in Title 19 of the California Code of Regulations.

The Fire Safety Director is responsible for all pre-emergency planning and training, and is in charge of emergency operations; the Assistant Fire Safety Director assists the Fire Safety Director and is in charge of emergency operations in the absence of the Fire Safety director and as delegated. Engineering is responsible for assisting the Fire Safety Director. Security is responsible for assisting the Fire Safety Director, and for implementing emergency procedures after hours and in the absence of the Fire Safety Director and Assistant Fire Safety Director. Security is on duty 24 / 7. 110 East Ninth Street has a Floor Warden program.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability, and upon request will provide reasonable accommodation to ensure equal access to its programs, services, and activities.

This booklet and its contents shall remain property of 110 East Ninth Street, and be made readily available to members of the Los Angeles Fire Department upon demand.

EMERGENCY CONTACT INFORMATION

California Market Center
110 East Ninth Street
Los Angeles, California 90079
(Cross Street: Main Street)

	<u>PRIMARY</u>	<u>ALTERNATE</u>
<u>FIRE DEPARTMENT</u>	9-1-1	800-688-8000

<u>PARAMEDICS</u>	9-1-1	800-688-8000
-------------------	-------	--------------

<u>POLICE DEPARTMENT</u>	9-1-1	213-485-2681
--------------------------	-------	--------------

NOTE: Alternate numbers above should be used only if a problem occurs with the 9-1-1 system.

OFFICE OF THE BUILDING / (Suite A-727)	OFFICE: 213-630-3600
--	----------------------

Assistant Property Manager / Eric Kim	OFFICE: 213-630-3600
---------------------------------------	----------------------

Chief Building Engineer / Darren Blan	OFFICE:213-630-3600
---------------------------------------	---------------------

Assistant Chief Building Engineer / Scott Wunner	OFFICE:213-630-3600
--	---------------------

FIRE SAFETY DIRECTOR (FSD) / Manny Rangel	OFFICE: 213-630-3600
---	----------------------

ALTERNATE FSD / Jaime Aburto	OFFICE: 213-630-3600
------------------------------	----------------------

SECURITY / Monday – Sunday 24 Hours	213-630-3700
Non-emergency reports	213-626-5273
Phone in only reports	213-485-7227
Central Divisions Desk	213-485-3294

FIRE EMERGENCY PROCEDURES

IF YOU DISCOVER FIRE OR SMOKE

IMPORTANT

REMEMBER THE 3 C's: CLEAR, CONFINE, CALL

1. **CLEAR** anyone in immediate danger.
CONFINE the fire by closing all doors to the area.
2. Activate the manual pull station to sound the fire alarm.
3. MOST IMPORTANTLY **CALL** THE FIRE DEPARTMENT at 9-1-1. (If there is problem with the 9-1-1 system, call 800-688-8000.)

Provide the following information:

Building Address: 110 East Ninth Street

Nearest Cross Street: Main Street

Floor/Suite _____ Number: _____

_____ Nature of _____ the

Emergency: _____ Your Call Back Number: _____

IMPORTANT

DO NOT HANG UP UNTIL THE EMERGENCY OPERATOR DOES SO FIRST.

4. Call the Fire Safety Director or Security. Be sure to make these calls from a safe location.
5. Use a fire extinguisher only if safe to do so and only if you are trained to do so. NEVER attempt to put out a fire alone. Be sure to use the right type of extinguisher.
6. Evacuate your floor by using the nearest safe emergency exit. Using safe stairwell procedures, proceed to your designated Safe Refuge Area.

WHEN YOU HEAR OR SEE THE FIRE ALARM ON YOUR FLOOR

1. Feel the door to see if it is hot. If **not hot**, open cautiously. Stand behind the door, be prepared to close quickly.
2. If there is no smoke present, proceed to your emergency stairwell exit. Follow safe stairwell procedures, walk down and proceed to your Safe Refuge Area.
3. If you do encounter smoke, crawl on your hands and knees along the wall to your emergency exit. Evacuate and proceed to your Safe Refuge Area.
4. Follow instruction from emergency personnel.

If door is hot:

- ✓ **DO NOT OPEN IT.**
- ✓ Use alternate door, if safe. If no alternate door and you are trapped in your office, "DEFEND IN PLACE".

IMPORTANT

"Smoke detectors are provided for your personal safety. Anyone who willfully and maliciously tampers with, damages, breaks or removes any required smoke detector shall be guilty of a misdemeanor (L.A.M.C. SEC. 57.112.05). Any person who willfully and maliciously sends, gives, transmits or sounds any false alarm of fire is guilty of a misdemeanor (P.C. 148.3)."

DEFEND IN PLACE

1. Call Fire Department at 9-1-1. (If there is a problem with the 9-1-1 system, call 800-688-8000.) Provide exact location and all known facts.
2. Call the Fire Safety Director or Security. Provide exact location and all known facts. If possible, contact your alternate to assume your responsibilities.
3. Seal the bottom of the door with cloth material to keep out smoke.
4. If water is available, wet cloths and seal the door and any vents.
5. Retreat. Close as many doors between you and the fire as possible.
6. Signal at the window waving a bright colored material.
7. Do not break the window. If there is smoke outside the window, the smoke may enter into the room you are in. Once broken the window cannot be closed. Breaking a window should only be done as a last resort.
8. DO NOT JUMP. Jumping from windows above the third floor can cause fatal injuries.
9. If there is smoke in the room:
 - ✓ Stay low -air is cooler and cleaner closer to the floor.
 - ✓ Hold a cloth over your mouth and nose.
10. **Remain calm. Help is on the way.**

IMPORTANT

ASSUME ALL ALARMS ARE REAL!

EVACUATION

According to Webster's, "evacuation" means to "withdraw from a place in an organized way especially for protection." Relocation is defined as the act or process of moving from one place to another (synonyms: move, removal).

"The Rule of Five says that if an alarm is activated on one floor, evacuate five. This means the original floor of device activation, two floors above, and two floors below. The fire department needs quick access to the two floors above to look for fire extension and the two floors below to be utilized as a base of operations for the fire department. The requirements for you to begin evacuation procedures immediately stem from firefighters' need to 'capture' the stairwell and use it for firefighting purposes. That is difficult when people are moving around in it."

At California Market Center, the audible/visual alarm is designed to sound on one floor, the floor of device activation. Unless otherwise instructed, occupant procedures are that upon hearing the fire alarm and/or an evacuation announcement on their floor, occupants will evacuate the floor immediately and proceed to their designated Safe Refuge Area. Simultaneous with the floor of alarm, announcements are provided via the public address (P.A.) system to the floor of alarm, two floors above, and two floors below to evacuate.

While it is usually advisable to go downward in a building during a fire, there are times when it may be necessary or more desirable to go to an upper floor or to the roof. This should only be done if lower floors are untenable due to heat and or smoke, or directed by Building Management, the Fire Safety Director, or the fire department.

Smoke may enter the stair shaft due to stairwell door being left open due to evacuation or firefighting. If the stairwell becomes filled with smoke, evacuees may be driven upward to clearer air. Once in clearer air, evacuees should exit the stair shaft and evacuate via the other stairwell.

Occupants should congregate in their designated Safe Refuge Area as appropriate until further advised by Building Management or the fire department. A head count at the Safe Refuge Area of all evacuees should be taken by Floor Wardens and Suite Monitors, and occupants should be asked if everyone has evacuated and employee lists reviewed. Visitors are to be accounted for. Any missing occupants as well as the location of physically challenged persons must be reported to building staff or fire department personnel.

BUILDING STAIRWELLS

Stairwells are the lifeline of a high-rise building. In an emergency, occupants must use them to evacuate their floor, and the fire department will use them to get to the fire floor. Nothing should ever be stored in the stairwells, and stairwell doors must never be propped open. Stairwells at California Market Center are as follows:

A-Building has five stairwells and all have the ability to cross from one stairwell to another by exiting on to a floor and moving horizontally to another stairwell. Stairwells 5, 7 and 9 provide egress from Roof Level to Ground Floor and these three stairwells have roof access. Stairwell 6 provides egress from Floor 11 to Ground Floor. Stairwell 8 provides egress from Floors 6 to 1. None of the stairwells in A-Building pressurize. All floors are unlocked 24 hours a day.

B-Building has four stairwells, which also have ability to cross from one stairwell to another by exiting on to a floor and moving horizontally to another stairwell. Stairwells 1 and 3 provide egress from Roof Level to Ground Floor and both have roof access. Stairwell 4 provides egress from Floor 11 to Ground Floor. Stairwell 2 provides egress from Floors 6 to 1. None of the stairwells in B-Building pressurize. All floors are unlocked 24 hours a day.

C-Building has three stairwells. Stairwell 15 provides egress from Floor 13 to Ground Floor. Stairwell 16 and 17 provide egress from Roof Level to Ground Floor, with these two stairwells in C-Building having roof access. All of the stair shafts are pressurized. The pressurization system for C-Building is tied into the fire alarm system and is designated to start automatically whenever the alarm system is activated. All floors are unlocked 24 hours a day and have the ability of cross from one stairwell to another by exiting on to a floor and moving horizontally to another stairwell.

LOCKED STAIRWELL DOOR INFORMATION

Stairwells at California Market Center have stairwell doors on all floors that remain unlocked at all times

STAIRWELL SAFETY INSTRUCTIONS

WHEN EVACUATION IS REQUIRED

- ✓ Move quickly but do not run.
- ✓ Go to the nearest safe stairwell or exit. DO NOT USE ELEVATORS.
- ✓ Remove high heels to prevent injuries (carry them with you).
- ✓ Use the inside continuous handrail to hold on to at all times.
- ✓ Allow room for others to enter into the stairwell in an orderly manner.
- ✓ When you are entering the stairwell, do not stop the flow of traffic if at all possible.
- ✓ Provide help to those people who may need assistance in using the stairs.
- ✓ Do not provide any false information or rumors, which may cause panic during descent. Do not use the word "Fire" while in the stairwell.
- ✓ Keep the noise level down. Loud and unnecessary talking and chatter is inappropriate and a safety hazard.
- ✓ If anyone is injured in the stairwell, wait to treat the injury at the next landing if possible and practical.
- ✓ When leaving the stairwell in evacuating the building, move quickly away from the building to the nearest safe designated outside Safe Refuge Area. Do not congregate at the bottom of the stairs or in the lobby.

OUTSIDE SAFE REFUGE AREAS

It is important for occupants evacuating the building to move away from the building in case of falling glass and out of the way of incoming fire department personnel. Use caution crossing streets and alleys. Occupants will meet their Floor Wardens or Suite Monitors at designated outside Safe Refuge Areas. Suite Monitors and Floor Wardens will take a head count at that location. Outside safe refuge area(s) for California Market Center are as follows:

- ✓ The Shopping Center Parking Lot south of the Property across Los Angeles Street

EARTHQUAKE

DURING THE EARTHQUAKE: you will usually be safer inside the building than you are outside.

If you feel a tremor:

1. **DUCK** -Duck or drop down to the floor.
2. **COVER** -Take cover under a sturdy desk, table or other furniture. If that is not possible, seek cover against an interior wall and protect your head and neck with your arms. Avoid danger spots near windows, hanging objects, mirrors or tall furniture.
3. **HOLD** -If you take cover under a sturdy piece of furniture, hold on to it and be prepared to move with it. Hold the position until the ground stops shaking and it is safe to move.
4. Do not enter or exit the building during the shaking. There is danger of falling debris.
5. Do not use the elevators. Building elevators will automatically move to the next floor in the direction of travel. Doors will open and elevators will shut off.
6. If you are outdoors, move away from buildings, falling objects and power lines.

AFTER THE EARTHQUAKE: Be prepared for aftershocks.

1. Check for injuries and administer first aid if necessary and if qualified. Do not move victims unless absolutely necessary.
2. Replace telephone receivers that have been shaken off but do not try to use the telephone. Telephones should be used for emergency calls only.
3. If evacuation is necessary, make sure all stairwells are safe to use. Do not use the elevators.
4. If you are outside, do not return to your office until authorized.
5. Listen to your radio and follow directions from Emergency Personnel.



DUCK

DUCK or drop down to the floor.



COVER

Take COVER under a sturdy desk, table or other furniture. If that is not possible, seek COVER against an interior wall and protect your head and neck with your arms. Avoid danger spots near windows, hanging objects, mirrors or tall furniture.



HOLD

If you take cover under a sturdy piece of furniture, HOLD on to it and be prepared to move with it. HOLD the position until the ground stops shaking and it is safe to move.

EMERGENCY SUPPLY CHECKLIST

The following is a list of recommended supplies for all occupants and staff. Remember, you may be on your own for 72 hours.

- _____ Portable radio and extra batteries
- _____ Flashlights and extra batteries or lightsticks
- _____ Whistle
- _____ Sturdy shoes
- _____ Heavy gloves
- _____ Dust masks
- _____ Goggles
- _____ Change of clothing
- _____ Water -2 quarts to 1 gallon per person per day
- _____ Food -packaged, canned, survival food bars, etc. (Can opener -non electric)
- _____ First Aid Kits and First Aid Book
- _____ Large plastic bags for trash, waste and water protection
- _____ Extra prescription for medicines
- _____ Extra glasses or contact case and solution
- _____ Cash (ATMs may not work)
- _____ Emergency telephone contacts, including out-of-state contacts

Supplies should also be stored in your car and at home. For additional information on recommended supplies contact the American Red Cross.

IMPORTANT

BE PREPARED!

MEDICAL EMERGENCY

1. Do not move the person.
2. Call the Paramedics at 9-1-1. (If there is a problem with the 9-1-1 system, call 800-688-8000.)

Provide them the following information.

Building Address:	110 East Ninth Street
Nearest Cross Street	Main Street
Floor/Suite Number:	
Floor/Suite Number:	
Nature of Emergency:	
Victim's Name and Location:	
Your Call Back Telephone Number:	

3. Call the Fire Safety Director or Security.
4. Try to make the victim comfortable. If you are trained in First Aid or CPR, assist as needed.
5. Gather as much information as you can about the person and his/her injury signs/symptoms and complaints of the victim.
6. Have someone at the elevator lobby on the floor to meet the paramedics and direct them to the victim.

BOMB THREAT

1. If you receive a telephone bomb threat, attract the attention of a coworker. Have your coworker call 9-1-1 (or if there is a problem with the 9-1-1 system, call 213-485-2681) to request that the call on your line be traced for police department response.
2. Get as much information as possible from the caller about the bomb's location, type and time of detonation. Ask about the bomb's appearance and who is placing it.
3. Listen for background noises or distinguishing voice characteristics that might aid the police.
4. Assure that emergency services and Building Staff have been notified. Relay all information.
5. Survey your immediate work area and report all suspicious items to Building Staff. Do not touch a suspected bomb or unusual device.
6. Follow directions from Emergency Personnel.

BOMB THREAT REPORT

Page One of Two

Name of operator or person receiving the call: _____

Date of call _____ Time _____ a.m. p.m. (circle one)

Questions to ask:

6. When is the bomb going to explode? _____

7. Where is the bomb right now? _____

8. What kind of bomb is it? _____

9. What does it look like? _____

10. Why did you place the bomb? _____

Origin of call (check all that apply):

Local _____ Long Distance _____ Telephone Booth _____ Internal _____

Identity of caller:

<u>Voice</u>		<u>Speech</u>		<u>Language</u>
Loud _____	Soft _____	Fast _____	Slow _____	Good _____
High Pitch _____	Deep _____	Distant _____	Distorted _____	Foul _____
Raspy _____	Pleasant _____	Stutter _____	Intoxicated _____	
Nasal _____	Poor _____			

Accent

Local _____

Ethnic _____

Foreign _____

Regional _____

Manner

Calm _____

Rational _____

Irrational _____

Angry _____

Incoherent _____

Emotional _____

Type _____

Coherent _____

Deliberate _____

Nervous Laugh _____

Righteous _____

California Market Center

110 East Ninth Street • Los Angeles, CA • 90079

OCCUPANT INSTRUCTIONS Page 15

BOMB THREAT REPORT

Page Two of Two

Background Noise

Office	Machine	Trains	_____
_____	Factory	Music	_____
Machines	Animals	Quiet	_____
Airplanes	_____	Voices	_____
Street Traffic	_____	Other	_____

Who did you inform about the call? _____

If caller seemed familiar with our building, indicate how: _____

As well as you can, write what the caller said:

IMPORTANT

**KEEP CALLER ON TELEPHONE AS LONG AS POSSIBLE;
DO NOT HANG UP FIRST.**

California Market Center
110 East Ninth Street • Los Angeles, CA • 90079
OCCUPANT INSTRUCTIONS Page 16

POWER OUTAGE

EMERGENCY POWER

The three has an emergency generators; one for Buildings A and B, one for Building C , and a portable generator. In the event of a power failure, the emergency generators will power the following:

- ✓ The Generator for buildings A and B will power B-Building stairwells and various exit signs, A-Building Stairwells, passenger and freight elevators, and A-Building Stairwell 5 and corridors.
- ✓ The generator for Building C will power C-Building corridors; C-Building exit and directional signs; at least one elevator car per bank in C Building; fire alarm control panel and other critical equipment in the FCC; critical equipment in the C-Building fire pump room located in the center area of the basement level Exhibit Hall; and three stair shaft pressurization systems in the C-building.
- ✓ Portable Generator will be used as needed around the property.

IF THERE IS A POWER OUTAGE

1. Remain calm and in place. Generally, there is no immediate need to evacuate.
2. Look around your area to see if the outage is within your suite only, the entire floor or area. If it appears to be within your suite only, call the Office of the Building. If it appears to be the entire area, turn on battery-powered radio to find out what is happening.
3. If allowed, unplug all electrical equipment, movie projectors, TV sets, computers, audio-visuals and turn off light switches. When power returns, it may be in a surge and blowout light bulbs and other equipment.
4. Depending upon the time of year, open window shades or drapes to provide natural lighting. If sun is bright, you may not want to open shades/drapes as this may heat up the office area. Close door and move to another area.
5. If evacuation is necessary, use flashlight or lightsticks to assist you in evacuating. Make sure your flashlights work now!
6. Follow directions from emergency personnel.

**BOARD OF FIRE
COMMISSIONERS**

—
DALILA T. SOTELO
PRESIDENT

JILL FURILLO
VICE PRESIDENT

ANDREW FRIEDMAN
GENETHIA HUDLEY-HAYES
CASIMIRO U. TOLENTINO

—
BLANCA GOMEZ-REVELLES
EXECUTIVE ASSISTANT II

CITY OF LOS ANGELES

CALIFORNIA



ANTONIO R. VILLARAIGOSA
MAYOR

FIRE DEPARTMENT

—
WILLIAM R. BAMATTRE
FIRE CHIEF

—
200 NORTH MAIN STREET
LOS ANGELES, CA 90012

(213) 978-3800
FAX: (213) 978-3815

<http://www.lafd.org>

Fire Drills are required by the Los Angeles Fire Code Section 57.33.19C.

Upon notification of fire, conduct of any fire drill, upon activation of the fire alarm, or upon the orders of the fire authority having jurisdiction, buildings or structures within the scope of these regulations shall be immediately evacuated or occupants shall be relocated in accordance with established plans.

All building occupants are required to participate in the fire drills
Any violation of this section may result in a criminal misdemeanor
filing

**BY ORDER OF THE
LOS ANGELES FIRE
DEPARTMENT**

TITLE 19, SECTION 3.09 (d)5(b)

Attention: California Code of Regulation Title 19, Section 3.09 (d)5(b)

Assure that the requirements of (d)(4)(F), "procedures to identify and assist the nonambulatory and physically disabled" are accomplished as follows:

(B) owner(s) or operator(s) of high-rise office buildings shall maintain a list of all permanent building tenants who have disabilities. **Building owner(s) or operator(s) shall be notified in writing by those who have disabilities.** Information provided in the list shall include any special emergency evacuation needs and permanent work location of such physically disabled persons. The list shall be located in the Fire Control Room.

If you have any physical condition, temporary or permanent, that may hinder you in the event that your area must be evacuated, please provide the following information to your Floor Warden or Suite Monitor and to the Fire Safety Director. They will assign people who will assist you in the event of an evacuation.

NAME: _____

SUITE/ROOM OR DEPT: _____

TELEPHONE NUMBER/EXT. _____

SPECIAL NEEDS _____

INCLUSIVE DATES (IF APPLICABLE) _____

**FILL OUT THIS FORM AND PROVIDE IT TO YOUR
FLOOR WARDEN, SUITE MONITOR, OR BUILDING MANAGEMENT.
RETAIN A COPY FOR YOUR RECORDS.**

Exhibit E

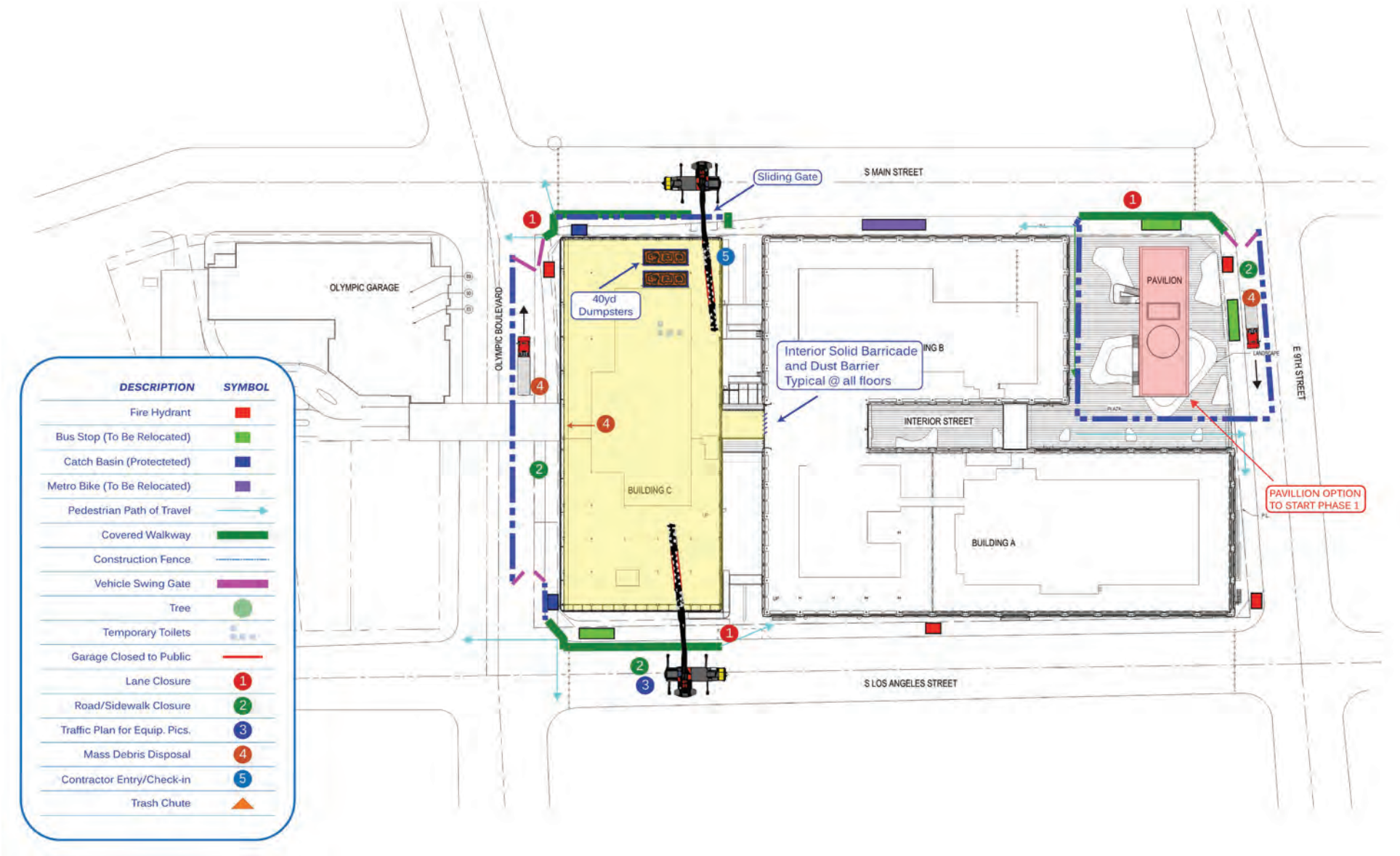
Procurement Plan/Purchasing Schedule

<div> <div>Turner</div> <div>California Market Center</div> <div>Exhibit E - Purchasing Matrix</div> <div>6/1/18</div> </div>		
BP	DESCRIPTION	TARGET AWARD DATE
1	Demolition	8/24/18
2	Concrete & Reinforcement	9/3/18
3	Masonry	9/3/18
4	Structural and Miscellaneous Steel	9/3/18
5	Fireproofing	9/3/18
6	Stairs	9/3/18
7	Roofing & Waterproofing	9/3/18
8	Doors, Frames and Hardware	9/3/18
9	Glass and Glazing	7/6/18
10	Drywall / Plaster	9/3/18
11	Paint & Intumescent	9/3/18
12	Code Signage	9/3/18
13	Structural and Miscellaneous Steel	9/3/18
14	Vertical Transportation	7/29/18
15	Fire Protection	7/6/18
16	Mechanical	7/6/18
16A	Mechanical - Turner Logistics	9/3/18
17	Plumbing	7/6/18
18	Electrical	7/6/18
18	Electrical - Turner Logistics	9/3/18
19	Striping & Parking Signage	12/6/18
20	Site Concrete	12/6/18
21	Landscape & Irrigation	12/6/18
22	Parking Control Equipment	12/6/18
23	Restoration	9/3/18
24	Crane & Hoisting	9/3/18
25	Miscellaneous Specialties	9/3/18

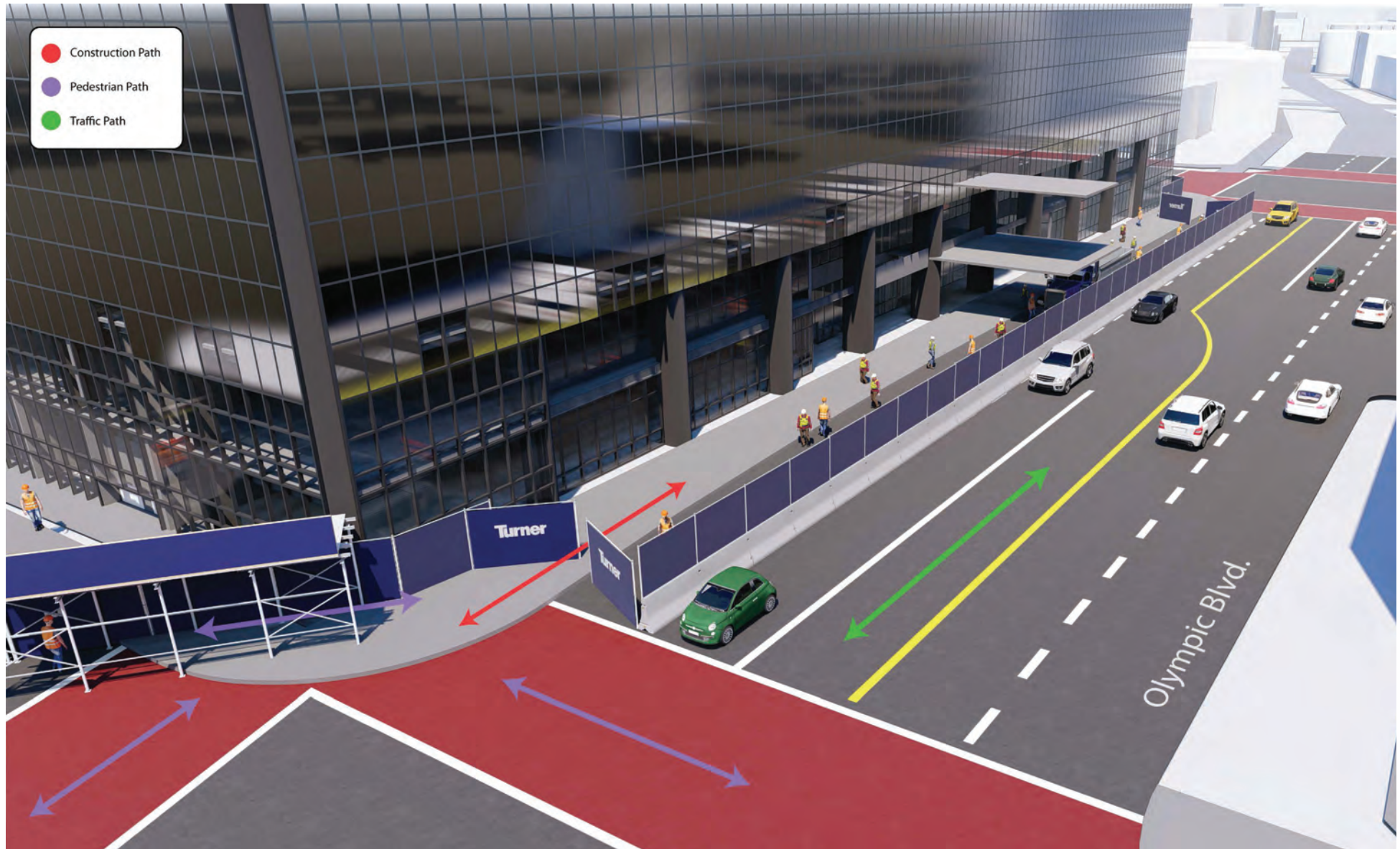
Exhibit F

Project Site Logistics Plan

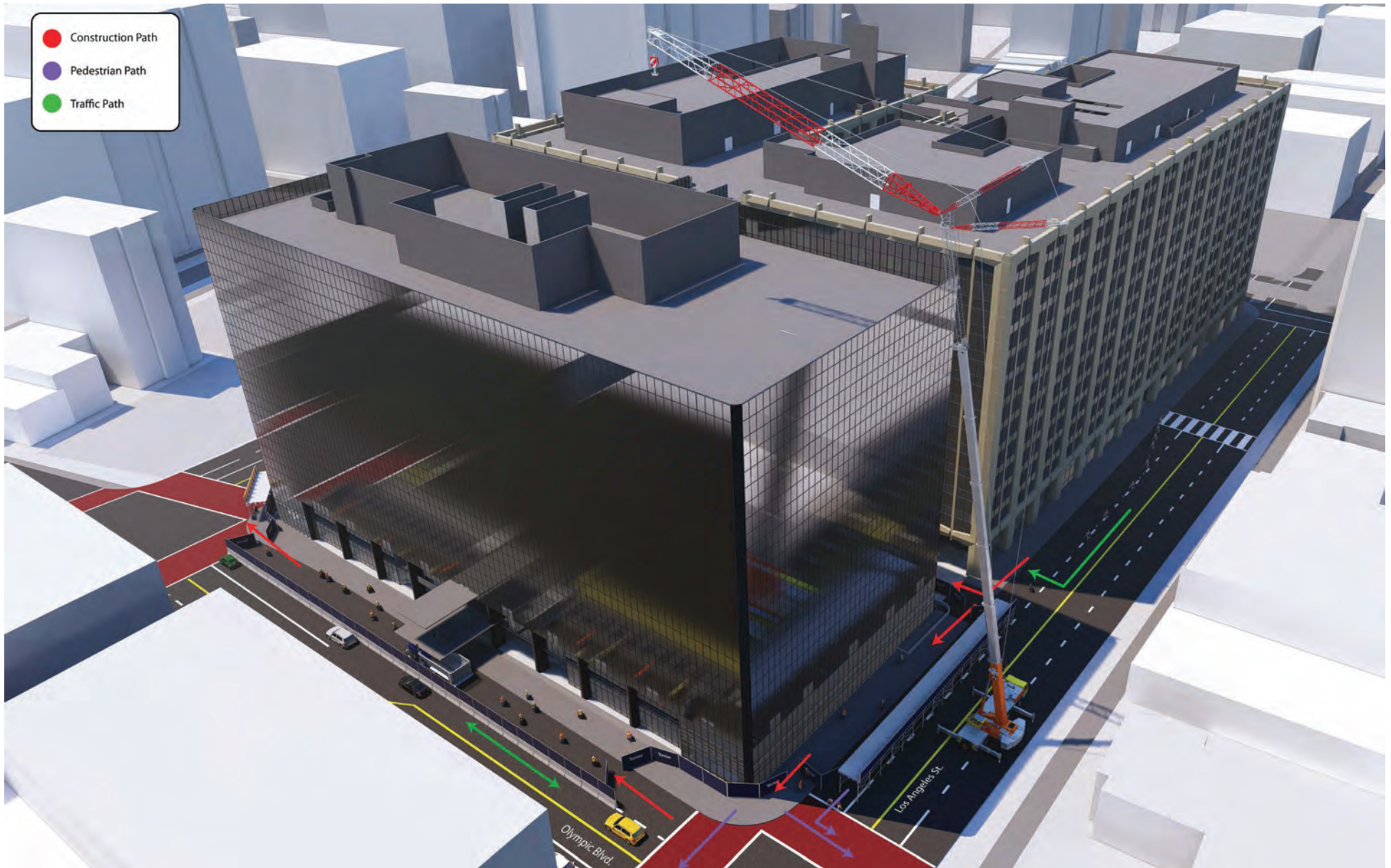
Phase 1 Site Logistics Plan

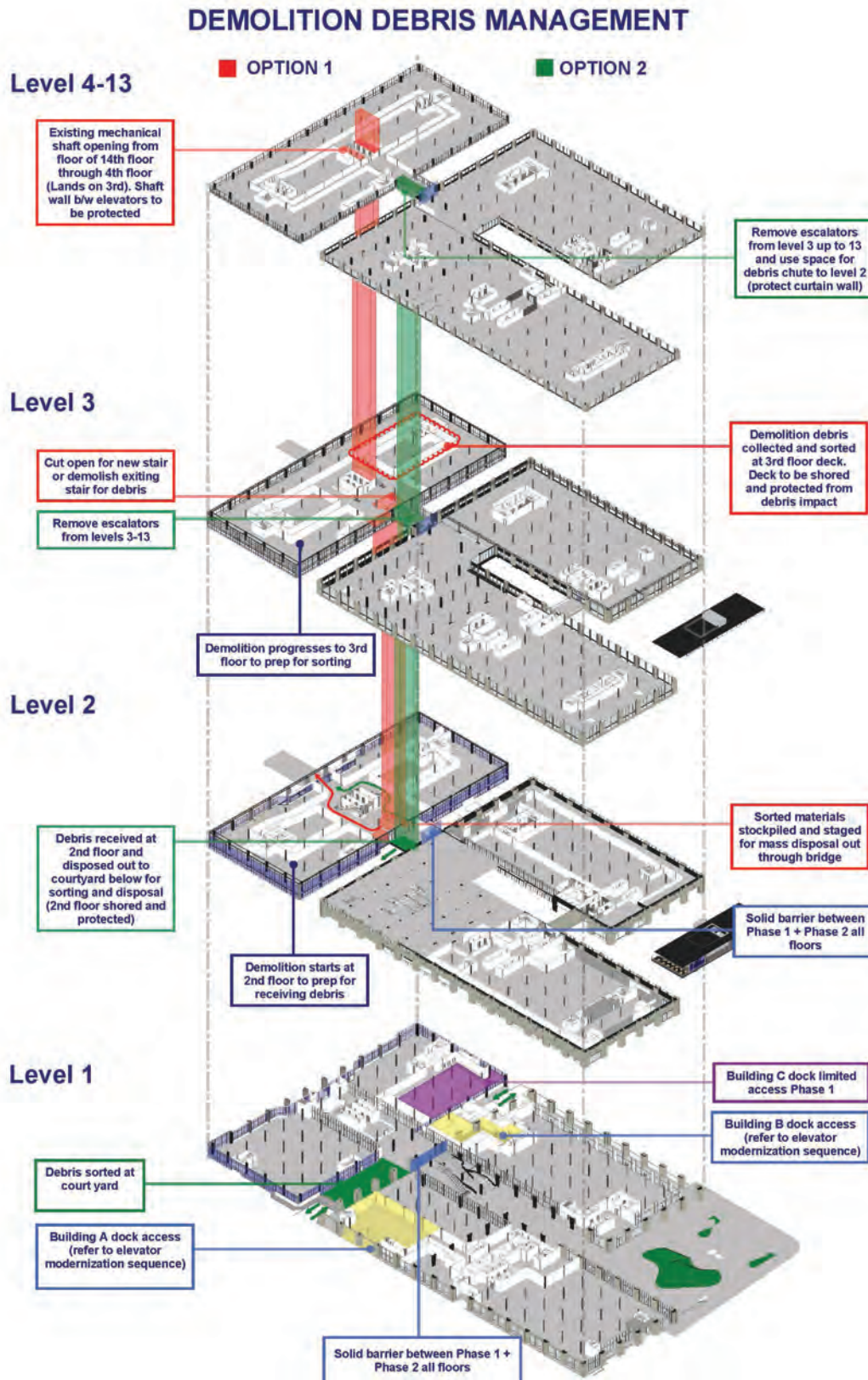


Phase 1 - Building C



Phase 1 - Building C

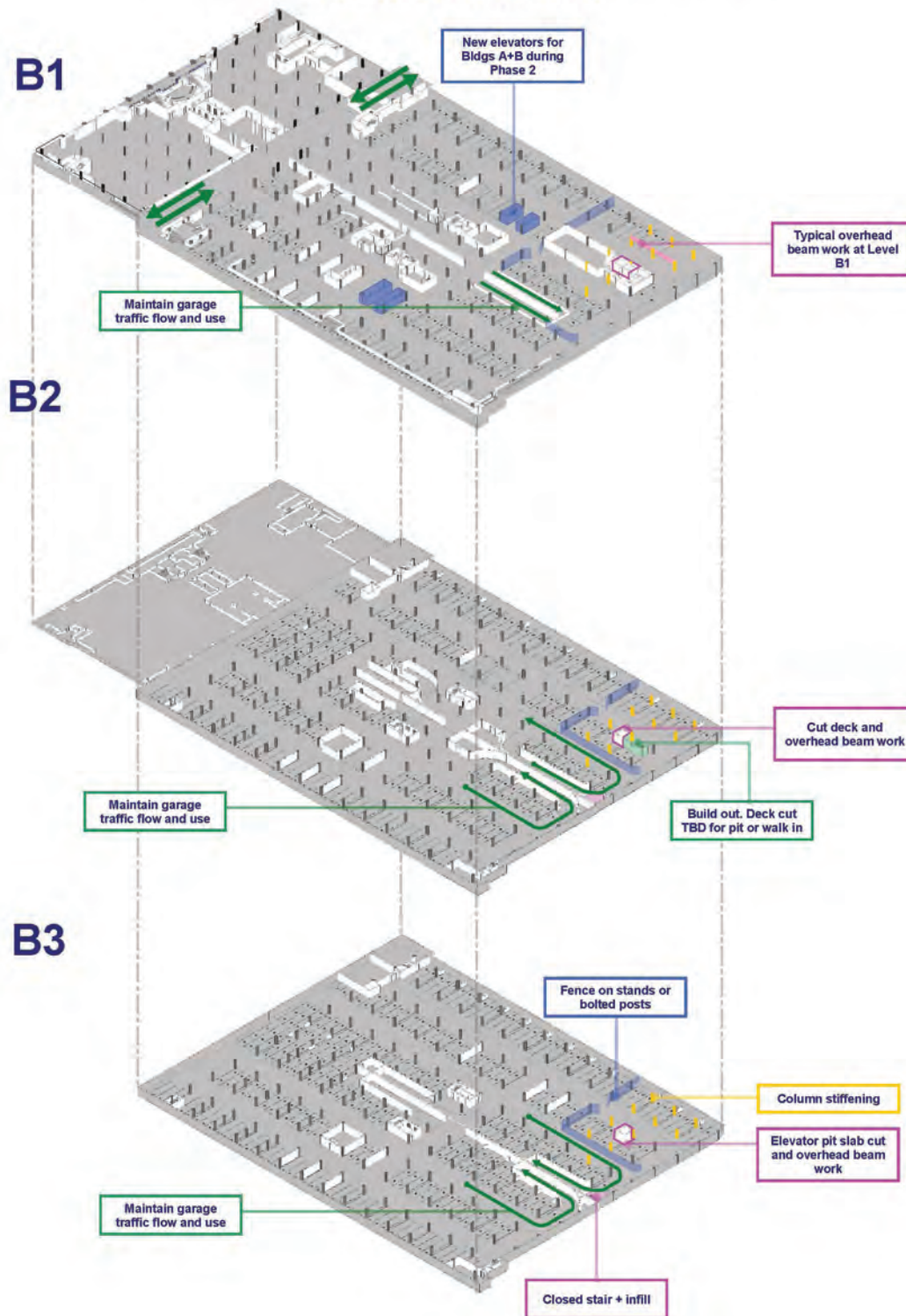




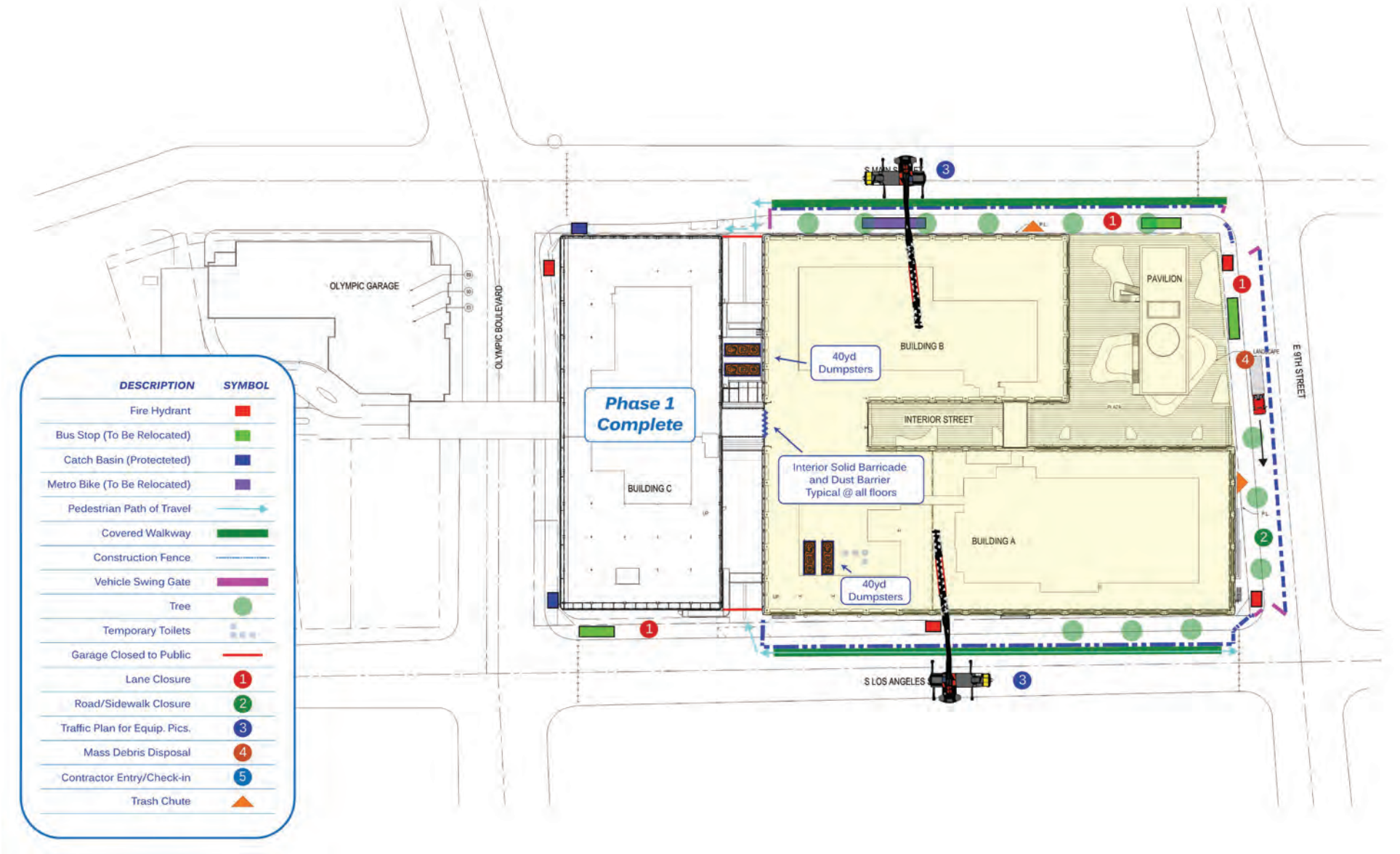
Phase 1 - Early Pavilion Option



EARLY PAVILION UPGRADES IN PHASE 1 APPROACH OPTION



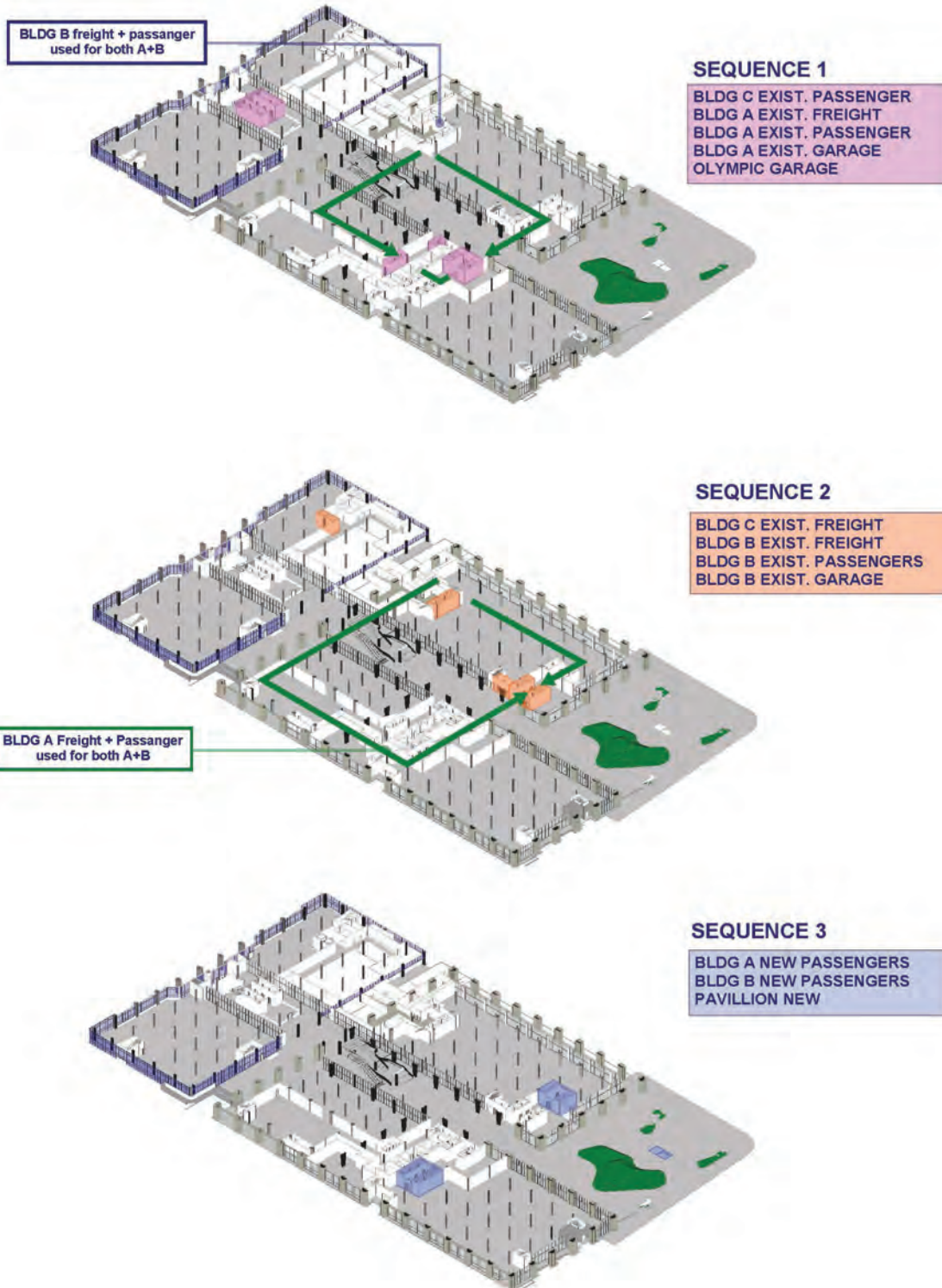
Phase 2 Site Logistics Plan



Phase 2 - Pavilion



ELEVATOR SEQUENCE



Brookfield

Brookfield - Calmart Sub I, LLC

CALMART - LOS ANGELES, CA

ELEVATOR SEQUENCE AND RESOURCE ALLOCATION

Turner

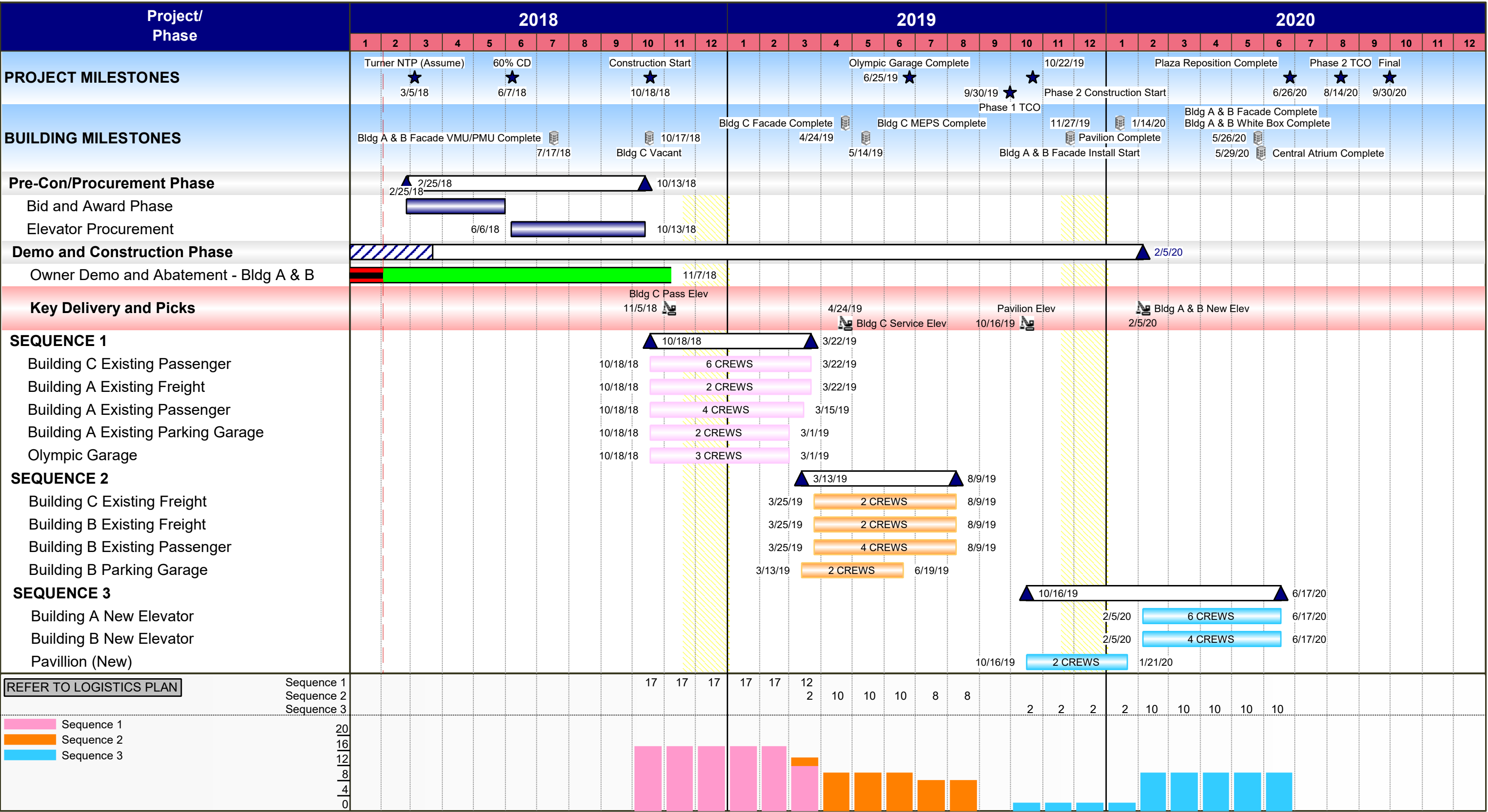


Exhibit G

Safety Plan

TURNER RISK MANAGEMENT

California Market Center

Environmental, Health and Safety Policy



Construction Company

California Market Center

Job Number: 170997

Safety Program Manual

Jobsite location:

110 East 9th Street
Los Angeles, CA 90015

Mailing Address:

1900 S State College Blvd Suite 200
Anaheim, CA 92806

Jobsite Numbers:

Turner Trailer Complex

Phone: TBD

Fax: TBD

Turner Staff:

Project Executive: Antonino Adamo

Project Manager: Jose Alday

Project Superintendent: Steven Brenson

Project Safety Manager: Andres Orozco

Emergency Telephone Numbers

Ambulance / Paramedics	911
Nearest Medical Center 24 hrs Reliant Immediate Care 814 Francisco St Los Angeles, CA 90017	310-491-7070
Nearest Emergency Center 24hrs Good Samaritan Hospital 1225 Wilshire Blvd, Los Angeles, CA 90017	213-977-2121
Fire Department Non-emergency	Emergency 911 213-485-0621
Los Angeles Police Department 100 West 1 st Street Room Los Angeles, CA 90012 Non-emergency	Emergency 911 877-275-5273
Turner Construction Company	714-290-8917
Under Ground Alert (Call before you dig)	811 800-422-4133
Electric Utility	800-499-8840
Gas Utility	800-427-2000
Communications Utility	TBD
Water District	800-499-8840

All accidents must be reported to Turner Construction Company Immediately

A.

ORGANIZATION

1. **The Owner : Brookfield**
2. **Project Manager: Jose Alday**
3. **Project Superintendent: Steven Brenson**
4. **Project Safety Manager: Andres Orozco**
5. **Subcontractor Safety Representative** - Each Subcontractor shall appoint a responsible management employee as Project Safety Representative.
6. **All Project Employees**

B.

RESPONSIBILITIES

1. **Project Superintendent:**
 - a) Has overall authority for the project's Safety and Health Plan.
2. **Project Safety Manager (or designated project safety coordinator):**
 - a) Shall enforce compliance with Turner's Project Safety and Health Program, OSHA Standards, and all other Federal, State, and Local Safety Codes and Regulations.
 - b) Shall implement the Safety and Health Orientation process for all employees assigned to the Project.
 - c) Shall assist all Subcontractors in pre-planning their operations to prevent personal injury and property damage.
 - d) Shall schedule, distribute notification, and chair the Monthly/Weekly Safety Meetings.
 - e) Shall receive all safety-related correspondence and copies of all accident reports.
 - f) Shall regularly inspect the Project for safety compliance.

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Appendix A: Environmental Operational Policy

Appendix B: Moisture Control Plan Guideline

Appendix C: Spill Prevention and Control Plan for Construction

Appendix D: Reserved

Appendix E: Lockout / Tagout Safety Program

- Appendix F: Written Lead and Heavy Metal Program**
- Appendix G: Infection Control Plan 2013**
- Appendix H: Turner Asbestos, Lead, Silica and Respirator Management Program**
- Appendix I: Construction Management Safety Policy**
- Appendix J: Heat Illness Prevention Policy**
- Appendix K: Air Pollution Control Policy**
- Appendix L: Barricade Tape Policy**
- Appendix M: Code of Safe Work Practices**
- Appendix N: Earthquake Emergency Response Policy**
- Appendix O: Safety Violation Policy**
- Appendix P: Site Delivery**
- Appendix Q: SWPPP Water Management and Spill Prevention Policy**
- Appendix R: Weather Protection – Mold Policy**
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Addendum.....Silica Exposure Prevention Table 1

**TURNER RISK MANAGEMENT
CORPORATE ENVIRONMENTAL,
HEALTH AND SAFETY POLICY**

Letter of Introduction

Environmental, Health & Safety Policy

Turner's safety culture is reflected in the principle of Building L.I.F.E. ® (Living Injury Free Every Day) with an expectation that all projects provide the safest workplace possible for our employees, contractors, clients and members of the communities in which we work everywhere, every day.

We expect our contractors to meet their contractual obligations of performing safe work, and to promote a culture within their own organization that aligns with the Turner ideal, executing work safely at every project every day.

Our history has demonstrated that the more aligned our business partners are with the principle of Building L.I.F.E. ® rather than regulatory compliance, the safer and more successful the project outcome.

Turner's Building L.I.F.E. ® safety program is a continuous improvement process with a focus on upstream risk avoidance and the activities which produce risk. The Building L.I.F.E. ® process seeks to increase frontline worker engagement in the safety and planning processes through engaging those closest to the risk in the decision making process. Building L.I.F.E. ® is anchored by a focus on positive reinforcement and feedback on safe behaviors by everyone involved in the delivery of the project. The Building L.I.F.E. ® model promotes teamwork and proactive safety engagement by everyone.

The guiding principles of Building L.I.F.E. ® are:

- Injuries are Preventable
- Perform a Job Only if it is Safe
- Working Safely is a Condition of Employment
- Practice and Expect Safe Behavior Everywhere, Every Day

It is Turner's expectation that everyone is responsible and accountable for the safe performance of work. If anyone sees something that is unsafe, or someone performing work in an unsafe manner, it is their responsibility to do everything they can to stop the activity. If they are not able to do so, it is their responsibility to immediately bring the situation to the attention of a person with authority to eliminate the danger.

Thank you for your support and help maintaining a workplace that promotes the Building L.I.F.E. ® culture. Together, we will continue to improve our performance and make our projects the safest possible.

Peter J. Davoren
President and Chief Executive Officer
Turner Construction Company

**TURNER RISK MANAGEMENT
CORPORATE ENVIRONMENTAL,
HEALTH & SAFETY POLICY**

**Administration &
Programs**



Crisis Management Plan

I. Policy Statement

Turner's Crisis Management Plan provides an outline of actions that must be taken to prepare for a crisis and response plan in the event of a crisis. The plan defines the action steps necessary and the responsibility assigned for such actions. A crisis is any event that has created and/or may still pose an immediate threat to life, property or business as usual. This may occur at a jobsite, a Business Unit office or other locations related to our business.

Such situations may include, but are not limited to:

- Incidents involving serious bodily harm and/or deaths, or property damages,
- Bomb threats, terrorist attacks,
- Collapse of a building or portion of a building,
- Earthquake, hurricane, tornado,
- Fire/explosion, water events, spills
- Equipment failure such as the collapse of a crane,
- Workplace violence,
- Environmental exposures,
- Extreme Business Interruption,
- Pandemic Illness,
- Labor Events, Protests, Immigration.

II. Procedures

1. The following are highlights of the Crisis Management Plan and may be found and viewed in detail in the Safety Section of the SharePoint Document Management System.

a) Section 1 – General

- The severity of the event will dictate the appropriate response. Your Business Unit Environmental, Health, and Safety Director (BUEHSD) and Operations Manager must be contacted before calling in a crisis using the National Crisis Number, 1-866-3-TURNER (1-866-388-7637).

b) Section 2 – Preparing for a Crisis

- The key to success in handling a crisis situation is preplanning, prior preparation, organization, and rehearsal / practice drills.
- Each project and office must have pre-determined Action Plans and Teams that are ready to react to any crisis situation.

c) Section 3 – Event Response Plans

- Several immediate and simultaneous actions must take place during a crisis regardless of the type of event.
- These actions should be directed by the Project Superintendent or, in his/her absence, the Project Safety Manager. Again, it is important to notify your BUEHSD and Operations Manager before contacting the National Crisis Number, 1-866-3-TURNER (1-866-388-7637). The Site Specific Crisis Plan will detail the actions needed.



d) Section 4 – Media Management

- All inquiries by the media should be referred to the General Manager or Operations Manager.
- Turner's Corporate Public Relations Group must also be contacted immediately by the Operations Manager or General Manager of the Business Unit.

e) Section 5 – Crisis Preparedness Checklist

- Turner's level of preparedness for a crisis prior to its occurrence will determine the success of effectively managing such an event.
- Crisis practice drills must be conducted semi-annually for project sites and offices. These also should occur at the start of every project.
- Checklists provided on SharePoint will assist in drill preparation.
- Projects should utilize posters, wallet cards, etc. to maintain a level of awareness and preparedness for any crisis that may develop. They are available on the Safety SharePoint site on the right hand side under Safety links and clicking on the Turner EH&S store.



EMR Policy

I. Policy Statement

In our ongoing efforts as the leader in construction safety, Turner has adopted the following policy to ensure that Subcontractors with the best safety performance are contracted to work with us. Subcontractors who have an Experience Modification Rate (EMR) greater than 1.0 will not be allowed to bid or be awarded work for Turner. This policy applies to all secondary tier subs as well. For projects where Turner doesn't hold the agreements, we should recommend the same policy to the Owner, but the final decision is obviously the Owner's. Please refer to TKN/Procurement/Procurement Manual/EMR policy for the specific policy requirements that must be adhered to.

II. Procedures

1. In rare occasions, Turner may issue a waiver to this policy. A one-page waiver request is available from Business Unit Procurement Managers or Business Unit Environmental, Health, and Safety Directors.
2. Every EMR waiver request must be submitted to the Business Unit Environmental, Health, and Safety Director and Business Procurement Manager prior to submittal to the Corporate Safety Director for approval.
3. Every EMR waiver request must contain a specific Risk Mitigation Action Plan to ensure the subcontractor can perform the scope of work without incident. The Business Unit Environmental, Health, and Safety Director and the Procurement Manager are responsible for developing the plan.
4. If a Subcontractor has been given a waiver based on his current published EMR and the BU wants to award another subcontract to the Subcontractor in the same EMR year, no additional waiver is required as long as the Business Unit Environmental, Health, and Safety Director and Procurement Manager agree that the Subcontractor's safety performance is meeting their expectations. The scope of work must be similar and the value of the project must be within 50% of the original Subcontractor Approval Request (SAR) value.
5. The Subcontractor Approval Request (S.A.R.) will indicate "see attached previously approved EMR waiver in place" and the previous waiver will be attached to the S.A.R. The same safety measures from the initial waiver will incorporate in future awards.
6. Once the Subcontractor's new EMR is promulgated, if it increases from the previous year, the waiver process starts over. If it decreases, the old EMR waiver may be used providing that the Procurement Agent and Safety Director review the updated OSHA 300 and 300A's to confirm that the EMR Waiver Risk Mitigation Plan is still valid and does not need to be adjusted based on trending information from the OSHA 300 Logs. If no adjustment is needed, no further approval is required outside of the Business Unit.
7. Each new waiver request must be accompanied with the S.A.R., the OSHA 300 and 300A Forms for the previous 3 years, a Risk Mitigation Action Plan for the Subcontractor on this project and letter(s) from their insurance broker confirming the past three years EMR's and incidence rates and what they are doing to help the subcontractor improve their performance.



8. The subcontractor must clearly submit in writing what they will be doing to lower their EMR to acceptable levels.
9. If the Subcontractor is not going to be onsite, except for supervisory oversight and the onsite installer has an EMR less than 1.00, then no waiver is necessary.

III. Roles and Responsibilities

1. Turner Procurement Manager & Safety Director:
 - a) Must ensure EMR policy is adhered to by all Turner employee and all processes for waivers are followed prior to subcontractor selection.
 - b) Must develop a risk mitigation plan, ensure it is in the subcontract, and conduct pre-planning meetings. They must require the use of Job Hazard Analysis (JHA) and daily Pre-Task Planning (PTP) meetings.
2. Subcontractor Management:
 - a) Must comply with and furnish materials necessary to comply with Turner policy.
 - b) Must attend and participate in project orientations.
 - c) Must participate in any and all required pre-planning meetings, JHA's and PTP meetings.



Mold and Moisture Remediation Policy

I. Policy Statement

Turner is not in the business of performing mold abatement or remediation work.

Turner Construction Company's Mold Taskforce was established to develop suggested practices to assist and provide guidance to the Business Units in connection with possible mold contamination. The taskforce has developed specific protocols to guide Turner Project Staff regarding mold, including the remediation process. All documents and forms are located in the Claims & Legal folder on the TKN Document Management System (TKN/Claims & Legal/Site Documents/Policy & Guideline /Business Unit Mold Suggested Practices).

The suggested practices begin once mold has been detected in the building and continue through complete remediation. The key to these practices is rapid response with prudent and reasonable judgment made depending on each situation.

II. Procedures

1. Initial Identification and Assessment – Once mold has been discovered, the business unit is to investigate, document and identify the problem and assess the magnitude of the situation. **An initial call must be made to The Business Unit Environmental, Health, and Safety Director and Claims Manager.**
2. Notification – All communications shall be legally protected by addressing the correspondence to Peckar & Abramson and copying only those with a need to know.
3. Remediation Evaluation – Working in conjunction with Turner Risk Management the project team and Operations Manager should determine the level of remediation needed and the need for external expertise.
4. Evaluate Responsibility – It is critical that the source of the mold is determined and a root cause is identified. The Project Team, Operations Manager, and Turner Risk Management will determine what caused the mold contamination and what parties are responsible for the remediation.
5. Parties on Notice – As soon as reasonably possible, the BU Claims Manager shall place the culpable parties on notice. Refer to Turner's Procurement Manual for guidance in 24 hour and 3-day notice letters per Subcontract Form 36. The Project Manager must notify the subcontractor that Turner is proceeding to have the mold problem corrected and that the subcontractor will be held accountable for the cost. Specific details can be found in the Claims and Legal folder on TKN titled "Tender Letter Protocol for Mold" (TKN/Claims & Legal / Site Documents / Correspondence / Mold Tender Letter). This document provides guidance on how to protect our interest relative to contractual indemnification and additional insured status.
6. Crisis Management – Depending on the extent of contamination, there may be a need for public relations involvement to minimize exposure.
7. Remediation Protocol – The Project Team manages the remediation of the mold with either a consultant and / or remediation contractor. **Specific details can be found at the Claims and**



Legal folder on TKN titled Mold Protocols 2 (TKN /Claims & Legal/ Best Practices & Lessons Learned / Mold Additional Protocol Levels).

8. Closing Report – Maintaining Legal Privilege, complete Interim Mold Closing report and forward to Peckar and Abramson and Turner Risk Management.

A comprehensive sample Moisture Control Plan Guideline is available in Appendix B of this manual.



Spill Prevention Control Policy

I. Policy Statement

As the leader in the construction industry, Turner Construction Company is committed to the prevention of unwanted chemical releases, specifically related to potential entrainment into ground water sources. It is our intention to provide and maintain the best possible work conditions to ensure the minimization of potential spills. This will be achieved through the continued implementation of our Spill Prevention Control Plan (SPCP). By promoting safe and efficient production and by minimizing all incidents that could increase cost to the project and potentially impact the environment. It is our belief that with complete cooperation from all workers, the SPCP program will continue to achieve commendable results.

This Spill Prevention Control Plan has been prepared by Turner Construction Company to assist projects in managing hazardous substance spills including, but not limited to, oil and other petroleum products. The SPCP is to be used to inform contractors of the potential hazardous materials, contamination prevention measures, emergency spill response, and responsibilities associated with hazardous materials during construction.

II. Procedures

1. Spill Prevention And Containment Measures

The number one defense against a spill is prevention. The easiest way to prevent spills is to: conduct proper vehicle maintenance and inspections; never place vehicles or equipment in or near sensitive environments; store all materials in protected and approved areas; store all chemicals in approved and labeled containers and follow the OSHA hazard communication standard / GHS; and train workers on the proper storage, handling and treatment of all hazardous chemicals on the project.

This section identifies the types of secondary containment or diversionary structures that will be used to handle spill sources.

- a) **Contaminated Soil:** An equipment leak from a fuel tank, equipment seal, or hydraulic line will be contained within a spill pad placed beneath potential leak sources. An undetected leak from parked equipment will be contained within the equipment staging area by removing the soil to a drum using a shovel or by installing a temporary berm.
- b) **Equipment Staging Area and Material Staging Area:** An equipment leak from a fuel tank, equipment seal, or hydraulic line will be contained within a spill pad placed beneath potential leak sources. An undetected leak, from parked equipment will be contained within the equipment staging area by removing the soil to a drum using a shovel or by installing a temporary berm.
- c) **Fuel Staging Area:** A spill during fueling operations will be contained within a spill pallet for small container handling or secondary containment berms. The transfer of fuel into portable equipment will be performed using a funnel and/or hand pump and a bucket or containment pan will be placed directly underneath the fueling operation to prevent any incidental spills or drips. A spill response kit will be located near the fueling area for easy access. The spill response kit will include plastic sheeting, tarps, absorbent pads, Lite-Dri absorbent (or equivalent) and shovels.
- d) **Unknown soil and groundwater contamination:** When contaminated soil is encountered, refer to the Environmental Policy section of the Safety, Health and Environmental Policy.



- e) Underground pipelines: If a leaking underground pipeline is encountered, the leaking material will be contained within the excavation. Turner Project Staff will contact Risk Management immediately.

III. Roles and Responsibilities

1. A project specific Spill Prevention Plan shall be developed and posted in the project Trailer prior to mobilization. A comprehensive sample Spill Prevention and Control Plan is available in Appendix C of this manual. This plan shall include the following:
 - i. Roles Responsibilities for Owner, Turner, Subcontractors, and Vendors.
 - ii. Formal inspection protocol and archiving procedures.
 - iii. Emergency procedures following a spill.
 - iv. Spill Containment Equipment List & Sourcing information.
 - v. Local Emergency Response Contact Information.
 - vi. Project Specific Hazardous Materials Communication.
2. Standards of Business Conduct and Ethics Policy requires that all contact by any government agency (including OSHA, EPA) be reported to the project BUEHSD, BU Operations Manager and notification sent to TCCO VP of Safety and TCCO Risk Management legal counsel. The government representative is to be escorted at all times by the senior TCCO representative onsite.
3. The project specific Spill Prevention plan shall be communicated to all Turner Project staff and key subcontractor personnel.
4. Coordinate with BU Stormwater Compliance Coordinators on complying with the National Pollutant Discharge Elimination System ("NPDES") related to the discharge of stormwater from construction activities. See Turner Construction Company Stormwater Compliance Program.
5. See Appendix C for Project Specific Requirements.



Handheld Unit Use Policy

*Mobile Handheld Units are handheld devices, including cell phones, iPhones, Androids, Blackberries, pagers, MP3 players (or equivalent), radios, and other communication devices.

Turner Construction Company and all subcontracted employees are prohibited from using mobile handheld units without a hands-free device (defined as vehicle mounted or headset ear clip) while driving on company time or while conducting Turner business. This Policy includes all calls made from the following types of vehicles on or off all Turner jobsites.

1. Vehicles provided by Turner Construction Company including:
 - Leased vehicles;
 - Golf carts and similar vehicles used for jobsite transportation;
 - Construction equipment to include cranes, scissor and aerial lifts, earthmoving, hauling, and excavating equipment, except for radios, when radios are the primary means of controlling the operation of the equipment.
2. Turner employee personal vehicles if the employee is receiving a vehicle allowance and/or the employee has been issued a company telephone.

Procedures/Expectations:

A driver's first responsibility while on company time or while conducting Turner business, on or off a jobsite, is the safe operation of the vehicle. The Policy should be followed accordingly.

Hands-Free Devices

Hands-free operation does not guarantee 100% safety but will provide drivers with less distraction.

1. Always use the appropriate hands-free device for your Mobile Handheld Unit. For telephones issued by the company, an appropriate hands free device will also be issued at company expense or the individual reimbursed for its purchase.
2. Use the Mobile Handheld Unit's speed dial and voice activated functions.
3. Turner employees should keep all calls while driving brief, and should end any call that distracts them from the road.
4. Inform regular callers of the best time to reach you based upon your driving schedule.
5. If a hands-free device is not available:
 - Do not use the Mobile Handheld Unit; send calls to voicemail, forward them to another number or turn off the unit.
 - Pull off the road to a safe location to make or receive a call or ask a passenger to make or take the call.
6. Never take notes, type, refer to maps, input information into a global positioning system (GPS), or any materials while operating a vehicle.



7. Check state requirements and follow the law. Example: In California, if you are punching a button, and therefore taking your eyes off the road, you are in violation of the law.

This mobile handheld device use policy is intended to reduce the likelihood of motor vehicle accidents. It may not prevent all motor vehicle accidents from occurring. It does not address potential compliance issues with Federal, State, local OSHA or any other regulatory agency standards. Nor is it meant to be exhaustive or construed as legal advice.



Hazard Communication Policy

I. Policy Statement

OSHA's Hazard Communication Standard, also known as HAZCOM, is now aligned with the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals, and requires each employer to establish a hazard communication program. GHS is based on major existing systems around the world, including OSHA's Hazard Communication Standard and the chemical classification and labeling systems of other international and US agencies. The result of the collaboration is a document called "The Purple Book." OSHA has modified the Hazard Communication Standard (HCS) to adopt the GHS to improve safety and health of workers through more effective communications on chemical hazards. This program must provide a means to inform employees about the hazards associated with chemicals that they may be exposed to in the workplace. Turner's Hazard Communication Program (HCP) has been established to comply with this standard by ensuring that hazards associated with chemicals in the workplace are communicated to all employees who may be exposed to them. The Turner HCP applies to all employees (Turner, Contractor, and Subcontractor employees) who perform work on projects managed by Turner. The communication of potential hazards associated with chemicals and hazardous materials in the work place shall be accomplished by means of implementing the following practices on each job site:

1. A written hazard communication program,
2. Use of container labeling,
3. Availability of Safety Data Sheets (SDS),
4. Maintenance of an on-site Chemical Inventory,
5. Employee training.

II. Procedures

- A. Written Hazard Communication Program - Each Business Unit shall include the Turner HCP in its safety program and ensure that a site - specific HCP is provided for each job. The jobsite program document must describe the manner in which labeling, SDSs and employee training requirements will be satisfied. The BUEHSD shall assist the Project Staff with development of this program.
- B. Chemical Inventory List - A list of chemicals known to be present on the jobsite will be compiled by the Turner Project Staff. This list will be maintained in the Turner project office and will be updated on a monthly basis. The list of the hazardous chemicals must be assigned a unique product identifier (i.e. number scheme) that can be cross-referenced on each corresponding SDS. Each subcontractor will submit an updated Chemical Inventory List to the Turner Project Staff.
- C. Safety Data Sheets (SDS) – The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Safety Data Sheets or SDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format. The Turner Project Staff will be responsible to obtain and maintain the on-site file of all SDS's supplied by each Subcontractor. Turner project staff should coordinate the exchange of SDSs between the subcontractors when requested. SDS information should be for materials specific to the site. SDSs shall be accessible to all employees on-site. Chemical manufacturers, importers, distributors, or employers who become newly aware of any significant information regarding the hazards of a chemical shall revise the labels for the chemical within six months of becoming aware of the new information, and shall ensure that



labels on containers of hazardous chemicals shipped after that time contain the new information. As part of the GHS, all SDS's will be uniform in appearance and must contain the following sections:

- a) Section 1. Identification
- b) Section 2. Hazard(s) identification
- c) Section 3. Composition/information on ingredients
- d) Section 4. First-Aid measures
- e) Section 5. Fire-fighting measures
- f) Section 6. Accidental release measures
- g) Section 7. Handling and storage
- h) Section 8. Exposure controls/personal protection
- i) Section 9. Physical and chemical properties
- j) Section 10. Stability and reactivity
- k) Section 11. Toxicological information
- l) Section 12. Ecological information
- m) Section 13. Disposal considerations
- n) Section 14. Transport information
- o) Section 15. Regulatory information
- p) Section 16. Other information, including date of preparation or last revision

D. Container Labeling – A hazard classification will be completed by the manufacturer and the following information is to be provided for each hazard class and category. Labels will require the following elements:

- a) Product Identifier (Ingredient Disclosure),
- b) Signal words,
- c) Hazard Statement,
- d) Pictograms,
- e) Precautionary Statements,
- f) Supplier Identification,
- g) Supplemental Information.

Secondary Container Labeling - Employers may choose to label workplace containers either with the same label that would be on shipped containers for the chemical under the revised rule, or with label alternatives that meet the requirements for the standard. However, the information supplied on these labels must be consistent with the revised HCS, e.g., no conflicting hazard warnings or pictograms.

E. Employee Training and Education – Turner Construction Company is responsible for training all Turner employees with regards to the HCP and the new GHS label elements (i.e., pictograms, hazard statements, precautionary statements, and signal words) and SDS format. An on-line training module on Turner University titled OSHA Global Harmonizing System Introduction will be required to be taken by all new and experienced hires. Full compliance with the final GHS rule will begin in 2015. The list below contains the minimum required topics for the OSHA Global Harmonizing System Introduction training that must be completed.

1. Label elements



- a. Type of information the employee would expect to see on the new labels, including the product identifier, signal word, pictogram, hazard statement, and precautionary statement.
 - b. Name, address and phone number of the chemical manufacturer, distributor, or importer.
 - c. How an employee might use the labels in the workplace.
 - d. General understanding of how the elements work together on a label.
 2. SDS
 - a. Standardized 16-section format, including the type of information found in the various sections.
 - b. How the information on the label is related to the SDS.
 - c. How to read and understand the information provided on the SDS.
 3. An overview of the OSHA Hazard Communication Standard (29 CFR 1926.59).
 4. The inclusion of welding or burning gases, cement, solvents, glues, wood dust, and soldering fumes as examples of common items to most jobsite, which present hazardous exposures to employees.
 5. All employees attending a training class will sign an attendance form to verify that they have been properly trained in the Hazard Communication Program.
- F. Hazardous non-routine tasks - Periodically, employees are required to perform hazardous non-routine tasks. An example of hazardous non-routine tasks is confined space entry to check the bottom of caisson. Prior to starting work on such projects, each affected employee will be given information by their supervisor about hazardous chemicals to which they may be exposed during such activity.

This information will include, but not be limited to:

- i. Specific chemical hazards.
 - ii. Measures that employees will take to prevent exposures.
 - iii. Measures the company has taken to lessen the hazard, including ventilation, respirators, presence of another employee, and emergency procedures.
6. Demolition / Renovation - When doing renovations or demolition at a jobsite, it is important to know the contents of all unmarked pipes, vessels, tanks or other type of containers as well as the location of lead, asbestos or other potentially hazardous materials that may be encountered. This information should be obtained from the Phase 1 Environmental Assessment and/or similar reports provided by the building owner. Once such information is identified, all of the



above Hazard Communication program requirements must be enforced in order to communicate appropriate information to employees.

III. Employee Training Requirements









In compliance with the OSHA Hazard Communication Standard (HCS), Turner Construction Company has developed a Hazard Communication Program. This program is intended to inform employees of the potential hazards of chemical products that they may be exposed to while on the jobsite. By providing this information, our goal is to ensure that proper precautions are taken to minimize the health risks associate with the use of materials used in the construction of any building by Turner.

In accordance with Turner policy, a written Hazard Communication Program (HCP) is prepared and maintained on the job by the Turner Project Staff. Included are specific guidelines concerning requirements of the Federal Law, such as safety data sheets, labeling and personal protection. The following areas must be covered during each training session:

- A. Safety Data Sheets - These are information sheets developed by the manufacturer of products (i.e. glues, solvents, paints, insulation), which contain hazardous materials are required to have the standardized 16 sections. SDS's are obtained by Turner for all material brought on the site by Turner or any subcontractor.
- B. Labeling - Labels are an appropriate group of written, printed or graphic information elements concerning a hazardous chemical (i.e. paint, caulk, thinner, glue, or other material) that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging. Labels from the containers should never be removed. Labels must include the product identifier, signal word, pictogram, hazard statement, and precautionary statement.
- C. Personal Protective Equipment - If personal protection is required, it will be provided for you by Turner or by subcontractors. In most cases, you will need nothing more complicated than safety glasses or goggles, gloves or a respirator. Equipment you will need will be determined by the information on the SDS provided by the product's manufacturer.



HCS Pictograms and Hazards

<p>Health Hazard</p>  <ul style="list-style-type: none"> ▪ Carcinogen ▪ Mutagenicity ▪ Reproductive Toxicity ▪ Respiratory Sensitizer ▪ Target Organ Toxicity ▪ Aspiration Toxicity 	<p>Flame</p>  <ul style="list-style-type: none"> ▪ Flammables ▪ Pyrophorics ▪ Self-Heating ▪ Emits Flammable Gas ▪ Self-Reactives ▪ Organic Peroxides 	<p>Exclamation Mark</p>  <ul style="list-style-type: none"> ▪ Irritant (skin and eye) ▪ Skin Sensitizer ▪ Acute Toxicity ▪ Narcotic Effects ▪ Respiratory Tract Irritant ▪ Hazardous to Ozone Layer (Non-Mandatory)
<p>Gas Cylinder</p>  <ul style="list-style-type: none"> ▪ Gases Under Pressure 	<p>Corrosion</p>  <ul style="list-style-type: none"> ▪ Skin Corrosion/Burns ▪ Eye Damage ▪ Corrosive to Metals 	<p>Exploding Bomb</p>  <ul style="list-style-type: none"> ▪ Explosives ▪ Self-Reactives ▪ Organic Peroxides
<p>Flame Over Circle</p>  <ul style="list-style-type: none"> ▪ Oxidizers 	<p>Environment (Non-Mandatory)</p>  <ul style="list-style-type: none"> ▪ Aquatic Toxicity 	<p>Skull and Crossbones</p>  <ul style="list-style-type: none"> ▪ Acute Toxicity (fatal or toxic)



IV. Roles and Responsibilities

A. Turner Management:

- a) Must conduct inspections of the workplace for compliance with this policy.
- b) Must discuss policy applications during project orientation with subcontractors.

B. Subcontractor Management:

- a) Must comply with and furnish materials necessary to comply with Turner policy.
- b) Must conduct mandatory GHS Training for their employees as required by the revised hazard communication standard.
- c) Must provide their company's Hazard Communication Program with SDS's and chemical inventory list prior to arrival to project.

C. Subcontractor Employees:

- a) Must attend and participate in HCP Training and project orientations.
- b) Must comply with this policy.



Housekeeping Policy

I. Policy Statement

This policy will apply to all work performed by Turner Project employees, contractors and tool vendors including, but not limited to, the following activities: construction, installation, demolition, remodeling, relocation, refurbishment, testing, and servicing or maintenance of equipment or machines. In addition, each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart C – General Safety and Health Provisions.

II. Procedures

1. Work areas must be kept clear and free of obstructions by material/debris as follows:

- a) Clean-as-you-go practices are required. Do not wait until all work has been completed before cleaning up. Instead, break the work down into smaller tasks and clean the area after each task is completed.
- b) Materials will not be stored in a manner that will block, restrict, impede or prevent access to an egress path or emergency equipment, such as fire extinguishers, emergency eyewash or shower, emergency shutoff buttons or emergency disconnect devices.
- c) Stairways shall not be used as storage areas.
- d) Work that may temporarily block emergency exits, safety showers, elevators, corridors, and hallways will require prior Turner approval.
- e) Project will enforce Turner's "Nothing Hits the Ground" requirements. All trash, debris, and scrap materials are to be placed into contractor-provided rolling trash hoppers, forklift-mounted hoppers, or other trash collection receptacles (that do not require workers to lift and carry) immediately upon creation. Upon filling any such receptacle, Contractors must remove all of its trash/debris and recyclables from the building to the agreed upon roll-off or dumpster. Provide an ample number of trash receptacles to allow each crew/team that generates waste or recyclables to have one. No "piling" will be allowed on the floors. Construction materials, job-boxes and tools must be stored/staged in approved areas, and never in walkways or stairways. Cords, hoses and welding leads must be kept off the floor at least 8 feet high in walkways, aisles, and stairs and access points.
- f) Housekeeping methods will be specified within your Job Hazard Analysis (JHA) and Pre-Task Plan (PTP).

2. Power Cord and other Utility or Hose Management:

- a) All cords must be inspected before use.
- b) At no time shall cords be strung across exits or in front of emergency equipment.
- c) Run cords overhead in a supported fashion, when feasible.



- d) Run cords around perimeters, when feasible.
 - e) Tape cords down or use cord covers, if they present a tripping hazard.
 - f) Support all cords that run through floors or ceilings with appropriate means.
 - g) All cords must be stored and put away after use. (I.e. not coiled up on floor).
 - h) All extension cords must be equipped with GFCI protection or be plugged into wall GFCI outlet.
 - i) Provide non-conductive hanger mechanisms or cord/hose pole-stands. Must be anchored to prevent accidental displacement.
 - j) If the above listed safety requirements cannot be met, temporary wiring must be installed to facilitate proper cord management.
3. Material Storage:
- a) Lay-down and storage areas are extremely limited on site. Contractors are not to bring more materials onto site than they will install during a week. All Materials stored in the building must be staged on wheels to allow for quick and easy relocation.
 - b) Materials stored in the vicinity of the area where work is performed should be limited to only those materials that will be used in the same shift.
 - c) Materials not to be stored in egress paths, stairways or within 10 feet of any opening edge, shaft or side which material could fall to next level.
 - d) Any material stored in a work area longer than 24 hours must be approved by Turner.
 - e) Materials should be stacked in a safe and orderly manner. Materials to be secure to prevent accidental displacement.
 - f) Material must be stored to promote mobility of material. Pipes, conduits, metal fabrications and steel framing are to be stored on rolling racks or similar conveyance. Bulk material should be palletized to allow for easy mobility using a pallet jack. Store all items neatly on carts, in cabinets or on shelves. Storage containers to have casters or other mechanism for easy movement of containers.
 - g) Materials stored should be designed and stage to incorporate ergonomic and mechanical advantage. Material movement and storage methods will be specified within your Job Hazard Analysis (JHA) and Pre-Task Plan (PTP).
 - h) Gang boxes and toolboxes should not have materials stored on top of them.
 - i) Small tools and materials should be kept on Industrial Carts or the equivalent when not being used. No tools or materials should be left on the ground that could present a trip and fall hazard.
 - j) If more storage area is needed, contact Turner.



4. Chemical Storage:
 - a) Turner reserves the right to approve all chemicals and quantities brought on site.
 - b) The user of the chemical must provide Turner Construction a Safety Data Sheet prior to bringing the substance on site.
 - c) All chemicals and equipment containing chemicals must be stored in approved areas. (i.e. chemical cabinet, bunker)
 - d) Contractors are responsible for removing all unused chemicals from the Turner Project site at the completion of their contract.
 - e) All chemical containers must be properly labeled.
 - f) Chemical/gas cylinders (welding, purging, leak detection cylinders, etc.) must be secured at all times.
 - g) All dedicated chemical storage areas must have safety data sheet (SDS) available at the storage location.
 - h) If you are unsure of appropriate storage areas, contact Turner for direction.
5. Material/Waste Disposal:
 - a) Waste disposal methods will be specified within your Job Hazard Analysis (JHA) and Pre-Task Plan (PTP).
 - b) All hazardous waste must be disposed of in accordance with Federal, State, and Local regulations and shall comply with applicable Turner hazardous waste programs.
 - c) All hazardous waste must be properly labeled.
 - d) Hazardous waste materials must be discarded into proper disposal containers
 - e) Non-hazardous waste must be disposed of into appropriate recycle or disposal containers.
 - f) Waste separation, recycling and reduction methods are encouraged on all projects and are to be made a part of the project logistics plan.



Incident Investigation and Reporting

I. Incident Reporting

For an incident involving personal injury, the subcontractor shall complete their own incident investigation report form and submit it to Turner as soon as reasonably possible (same work shift) but no later than 24 hours.

The Project Safety Manager and/or Superintendent shall notify the Business Unit Claims Coordinator and Business Unit Environmental, Health & Safety Director (BUEHSD) as soon as practical after the incident, but no later than 8 hours. In addition, a Turner Incident Investigation Report will also be completed in Risk Console by the Turner Project Superintendent and/or Project Safety Manager (if assigned) based on the information collected from witnesses and contractors. All matters pertaining to medical records and reports shall be kept strictly confidential by the responsible party.

II. Responsibilities

All incidents resulting in injury or property damage are to be reported at the time of occurrence to the Turner Project Superintendent. The Turner Superintendent will speak with the worker involved in the incident as well as the subcontractor in charge of the person(s) involved or witnesses to the event. The contractor will complete their own incident investigation report form and request each craft person involved to complete a written statement whenever such events take place. Turner and or the Owner may require a more detailed investigation and the Subcontractor shall comply with their directions.

III. Incident Reporting Procedures

1. Near Miss/ Injury Free Event

It is the responsibility of the Turner Project Superintendent or Project Safety Manager to complete the investigation using the Turner Construction Company Incident investigation report in Risk Console. This report will include recommendations / implementation of corrective actions. The report will be submitted as soon as reasonably possible (same work shift) but no later than 24 hours. A gathering of all involved will take place within 24 hours of the incident to review the case and determine if the steps taken to remediate the incident were appropriate. If applicable a Lesson Learned will also be developed and approved by TCCO to relay any information gathered that may assist in the elimination of a future similar occurrence.

2. First Aid Event

Any first aid event will result in a full incident investigation. TCCO feels that no injury is minor but an opportunity to learn and eliminate like occurrences. Daily records of all first-aid treatments not otherwise reportable shall be maintained in Risk Console for record purposes only.

3. Medical Treatment Event

If the injury is considered an emergency call 911. It is the responsibility of the each subcontractor to immediately notify the Turner Project Superintendent, and the Turner Project Safety Manager of any event requiring medical treatment. Failure to do so may result in



subcontractor disciplinary action.

4. Serious Injury Event

It is the responsibility of the each subcontractor's safety representative to immediately notify the Turner Project Superintendent of a serious injury requiring medical treatment. The Turner Safety Manager or senior TCCO project representative will oversee the completion of required Turner reporting forms in Risk Console. The Turner Business Unit Environmental, Health, and Safety Director and Claims Manager shall be notified as soon as possible. The Turner Business Unit Environmental, Health, and Safety Director will contact OSHA when required, regardless of the of the subcontractor's requirement to notify. The BUEHSD will call the Turner Crisis Hotline when appropriate. Updates to OSHA's Recordkeeping rule effective January 1, 2015 requires employers to report all work-related fatalities within 8 hours and all in-patient hospitalizations, amputations, and losses of an eye within 24 hours of finding out about the incident.

5. Fatality

It is the responsibility of the subcontractor safety representative to notify the Turner Project Superintendent or the Turner Safety Manager of an event resulting in a fatality. The Turner Project Superintendent will then implement the Turner Crisis Management Plan. All notifications must follow in accordance with the Turner Crisis Management Plan notifications flowchart. The BUEHSD, BU Claims Manager, General Manager, and Operations Manager must be notified immediately. All media inquiries are to be referred to the Owner or as the Site Specific Crisis Plan dictates. A notification must be made to OSHA within 8 hours.

6. Property/Environmental Damage

It is the responsibility of the Turner Project Superintendent to notify the Turner Project Manager and Owner of the incident and assist in the assessment of damages. The Turner Project Manager will be responsible for notifying applicable insurance carriers in accordance with policy provisions. The Business Unit Environmental, Health, and Safety Director and Claims Manager shall be notified in all cases. Turner Project Superintendent or Safety manager shall input a report into Risk Console for record purposes only.

7. General Liability Accident

It is the responsibility of the subcontractor safety representative to immediately notify the Turner Project Superintendent of an event involving the general public. The Turner Project Manager will immediately notify the Owner. The subcontractor involved will complete an incident report and submit it to the Turner Superintendent or his designee. Turner Project Superintendent or Safety manager shall input a report into Risk Console for record purposes only. The Business Unit Environmental, Health, and Safety Director and Claims Manager shall be notified. The BUEHSD and Claims Manager will determine if a Third Party Investigator will be needed.

In all cases of damage, an incident, or injury, a full investigation will be conducted by TCCO and the contractors to determine potential contributors to the incident in hopes of eliminating the conditions reoccurrence on this or any project. The intent of the investigation is not to affix blame but to learn from the event.



IV. Documentation for all Incidents Requiring Medical Treatment (Emergency and Non-Emergency)

The following forms must be completed and delivered to the Project Safety Manager. These will be made available at the site.

- Turner Construction Company Incident Report form in Risk Console.
- Employee Incident Statement(s) (speak with all employees and workers that may have information regarding the incident)
- Subcontractors Incident Report

All incidents, near misses, injuries, illnesses and unusual events that have occurred will be investigated thoroughly:

Projects are responsible to have onsite equipment to document the accident scene. Photos, sketches, schematics and related evidence/equipment should be collected for report and preservation as soon as practicably possible after an incident. Photos should be taken of the site of loss as soon as practicably possible. Do not take photos of the injured if at all possible.

Except for rescue and emergency measures, the accident scene shall not be disturbed and should be barricaded until it has been released by the investigating official. The Subcontractor is responsible for obtaining appropriate medical and emergency assistance and to ensure timely response to injured worker or event.

It is required that the investigation team inspect any equipment involved in the incident and secure it for future use as evidence, if practicable, i.e. ladders, tools, PPE involved in the incident, etc. If the incident involves a ladder the permit must be collected along with any inspection forms for the ladder.

Incident reports are to be completed in Risk Console, within 24 hours even though supplementary information may be necessary but not available for a period of time.

"Subcontractor" is intended to mean any contractor working under Turner's inspection, supervision and/or direction whether under contract to Turner or the Owner as on Construction Management. This policy will be used on all projects at all times.

In all cases, the Site Specific Crisis Management Plan and the Site Specific Health and Safety Plan will be the guiding document. See Appendix T for additional instructions.

Turner Construction Company - Incident Investigation Report

(To be completed within 24 hours by Supervisor)

GENERAL INFORMATION

Date: _____ Contract Number: _____
BU Name: _____ Project Name: _____
Project Address: _____
Program: ___CCIP ___CORP ___OCIP ___Other Explain if Other: _____
Site Contact Name: _____ Phone: _____ Cell: _____
Exec: _____ Superintendent: _____
Date of Incident: _____ Time: _____ AM/PM Shift: _____
Jobsite/Area (refer to columns/beams/drawings as needed): _____
Weather Condition: _____ Lighting Condition: _____

INVOLVED PARTY INFORMATION

Name: _____ ___Male ___Female
Date of Birth: _____ Height: _____ Weight: _____
Address: _____
Home Phone: _____ Employee ID#: _____
Employee Job Title: _____ Length Employed: _____
Employer Name: _____ Supervisor: _____
Cell #: _____ Employer Address: _____
Shop Steward: _____ Cell #: _____
Speaks Fluent English: ___Yes ___No Language: _____

INCIDENT DESCRIPTION

Describe in detail how the incident occurred and the task being performed by the involved party when he/she claims to have been injured or became ill including how long and with whom they were performing the task. Include specifics such as equipment, structure, tools, materials, objects (size, shape and weight), positions,

Enter Description Here

distances, sequence of events, etc. [Facts Only]

Attach a diagram of the incident scene/site layout to better describe the incident

Date: _____ Prepared By: _____

Turner Construction Company - Incident Investigation Report

WITNESS INFORMATION

Name: _____

Phone: _____

Company: _____

Cell: _____

Name: _____

Phone: _____

Company: _____

Cell: _____

Name: _____

Phone: _____

Company: _____

Cell: _____

Name: _____

Phone: _____

Company: _____

Cell: _____

INCIDENT INFORMATION

Describe the nature and extent of all claimed injury(s) / illness (body part affected, type of injury, etc.)

Enter Description of Claimed Injury Here

Was First Aid Administered? ___Yes ___No By Whom? _____

Was Employee/Third Party taken to Hospital/Clinic? ___Yes ___No If yes, list name, phone & address

Name: _____ Phone: _____

Address: _____

Is Employee in a Trade Union? ___Yes ___No If yes, provide Trade & Local #: _____

Additional Comments:

Enter Any Additional Comments Here

All incidents need to be immediately reported to your BU Environmental, Health, and Safety Director & Claim Coordinator.

Copy to be submitted to BUEHSD and Claim Coordinator for filing. Original to be kept with job files.

Date: _____

Prepared By: _____

#180

Name: _____

Address: _____

Telephone #: _____

Date of Incident: _____ Time: _____

Location of Incident: _____

STATEMENT

I observed the following at the time of the incident:

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Date _____

Witness Signature



Personal Protective Equipment

I. Policy Statement

All employees of Turner will be provided the personal protective equipment necessary to complete their jobs safely. A competent person onsite will determine necessary equipment. Each subcontractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart E – Personal Protective and Lifesaving Equipment in addition to the following guidelines.

II. Procedures

1. All Turner employees, subcontractor employees and visitors to project sites are required to wear safety glasses that comply with ANSI Z87.1. Dark lenses are not to be worn inside of buildings, in enclosed areas or at night. Prescription eyeglasses and sunglasses that do not comply with ANSI Z87.1 are **prohibited**.
2. High visual, safety vests, shirts or jackets shall be worn as the outermost apparel by all employees, 100% of the time. ANSI Class 2 (0-44 MPH) and Class 3 (45 MPH or more) outerwear must be worn whenever working on or near (within 10 feet) of a roadway.
3. All Turner employees, subcontractor employees and visitors to project sites are required to wear hardhats that comply with ANSI Z89.1. Cowboy hardhats, aluminum hardhats, and bump caps are not permitted on Turner Construction Company Projects. Employees exposed to electrical voltages of 600 V or greater shall wear hardhats that meet the requirements of ANSI Z89.2 Type Hardhats.
4. All Turner employees, subcontractor employees and visitors to project sites are required to wear at a minimum, hard sole safety shoes or boots. Safety toe shoes or boots, or toe guards must be worn when using jackhammers, tampers or similar equipment which could be dropped or landed on a worker's toes / feet. Safety shoes or boots must also be worn by masons, drillers, pile driving, steel erectors, and riggers due to the hazards inherent with their work.
5. Where employees are performing work that could potentially cause materials to become flying objects such as, but not limited to, chipping, welding, grinding, cutting, drilling and chiseling, they shall utilize a face shield in addition to safety glasses. A face shield shall be worn while using powder-actuated tools and drilling overhead. When working above shoulder level, additional eye protection is required, beyond regular safety glasses. A full face-shield that clamps tightly onto the brim of the hardhat should be worn in most cases to prevent dusts and debris from falling behind the safety glasses into the eyes. Unvented safety-goggles that fit snugly against the skin can be substituted.



6. Where necessary, each employee shall use equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation.
7. Where employees are performing work that could potentially expose them to harmful chemicals or micro airborne particles they may be required to utilize safety goggles and or a face shield. Please refer to manufacturer SDS for specific requirements. Goggles are required for abrasive actions in which dust can enter the eye.
8. Employees are required to wear protective gloves 100% of the time.
 - a) The only exception to this policy is if the competent person determines that the use of protective gloves for a specific activity creates a greater hazard.
9. Appropriate arm protection is required during operations where the arms are exposed to cut hazards (i.e. Kevlar, Dyneema sleeves, etc.). Examples of these activities are working around metal studs and pull boxes, tight confines as between wall studs or above ceiling and all demo activities. These operations shall be identified on the JHA/PTP.
10. Contractors exposed to dust, fumes, and/or gases shall be provided with proper respiratory protection designed to protect against the particular substance encountered. The Contractor is solely responsible for the proper testing and training per OSHA standards, and to provide the appropriate equipment.
11. Workers exposed to roofing tar must wear long sleeved shirts and gloves. Workers who are directly exposed to hot tar must also wear a full apron and face shield.
12. Where an employee could be exposed to noise in excess of 85 dBA, their employer will provide hearing protection, which will reduce the noise to an acceptable level. If the noise levels are determined to cause and 8 hour TWA exposure greater than 85 dBA, the subcontractor shall be required to submit a detailed hearing conservation program to Turner. This program shall be approved prior to beginning work.



III. Roles and Responsibilities

1. Turner management-
 - Conduct hazard assessments to identify specific PPE for Turner Craft Workers and ensure adequate hazard assessments are conducted by the subcontractors.
 - Supply necessary PPE and training to Turner staff.
 - Monitor use of PPE by Turner staff and subcontractors.
2. Subcontractor management
 - Conduct hazard assessments to identify specific PPE for Subcontractor Workers and ensure adequate hazard assessments are conducted by their subcontractors
 - Provide necessary PPE and training.
 - Monitor use of PPE.
 - Provide replacement PPE when needed.
 - Identify any new hazards that would require the use of PPE.
 - Be responsible for the assurances of PPE adequacy, maintenance and sanitation.
3. Subcontractor employees
 - Properly use and care for assigned PPE.
 - Immediately inform supervisor if PPE is damaged or not effective.



Job Hazard Analysis / Pre-Task Planning

I. Policy Statement

This policy identifies the method of Job Hazard Analysis and Pre-Task Planning that are required for each work operation not only by Turner but also for each subcontractor, regardless of tier. The Job Hazard Analysis (JHA) will be submitted to the project team for review and comment **prior to starting the work in the field**. Sample forms are available in the forms section of the manual, the Subcontractor Safety Requirements section and in the Safety Section of the TKN2 Document Management System.

II. Procedures

1. Job Hazard Analysis – JHA

- a) For each phase or major type of work a JHA will be completed to identify the following:
 - Safety and Health Considerations
 - Description of Steps to be Performed
 - Hazards Associated with Each Step
 - Required Action to Eliminate or Control the Hazard
 - Supervision Sign-off
- b) **Work shall not begin until the JHA for the work activity has been reviewed by Turner Construction** and discussed with all engaged in the activity, including the Contractor, subcontractor(s), and other affected on-site representatives at safety pre construction meetings.

2. Pre-Task Planning – PTP

This daily plan is designed to take place at the start of each work shift. Subcontractor supervisors should meet with their crews to discuss the tasks to be accomplished and the steps that need to take place to work safely. All workers should review and sign the relevant PTP for their assigned work. The main components of the Pre-Task Plan will include the following:

- a) For each phase or major type of work a PTP will be completed to identify the following:
 - Evaluating the Work Area
 - Potential Hazard Checklist
 - Description of Steps to be Performed
 - Hazards Associated with Each Step
 - Required Actions to Eliminate or Control the Hazard
 - Crew Sign-off
- b) **Work shall not begin until the PTP for the work activity has been** discussed with all engaged in the activity, including the Contractor, subcontractor(s), and other affected on-site representatives at a safety pre-construction meeting or daily huddle.



A copy of the PTP shall be kept near the work location and **will be submitted to Turner on a daily basis.**

The information the supervisors are relaying to the workers is the same that was developed in the JHA however, the PTP will greater define the plan for that particular phase of work.

III. Roles and Responsibilities

- 1) The Subcontractor representative is responsible for submitting JHA's to the Turner Project Superintendent 7 days prior to the start of work. The JHA shall be utilized during the safety preplanning meetings with subcontractors.
- 2) The Subcontractor representative is responsible for completion of PTPs, communications with trade workers, and archiving of the documents. The frontline workers shall be engaged during the creation of the PTP's.
- 3) The Project Superintendent will ensure that all JHA's and PTP's are completed for all phases of construction activities for Turner, subcontractors and all tiers.
- 4) Pre-construction meetings should always be held by the project team and attended by direct supervisory personnel of the subcontractors who will perform the work.

IV. List of General Hazards by Trade

Trade	Hazards
All Trades Brick Layers Stone Masons	Slips, trips, & falls, caught-between, struck-by's, electrocutions. Cement dermatitis, awkward positions, heavy loads, Silicosis, Falls(Slips, Trips and from Height), Lacerations, Head Injury, Back Injury
Hard tile setters	Vapor from bonding agents, Lacerations, Slips, Trips and Falls, Back Injury
Carpenters	Wood dust, heavy loads, repetitive motion, Sheet rock Dust, Slips, Trips and Falls, Falls from Height, Struck By, Debris in eye, Lacerations,
Drywall installers	Plaster dust, heavy loads, awkward positions, Falls from Height, Debris in eye, Struck By, Slips, Trips and Falls, Lacerations



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Electricians	Electrocution, Struck By, Lacerations, Falls from Height, Slips Trips and Falls, Punctures, Back injury
Painters	Solvent vapors, paint additives, Falls from Height, Slips, Trips and Falls, Struck By's
Paperhangers	Vapors from glue, awkward positions, Lacerations, Falls from Height, Struck By
Plumbers	Caught Between, Lead fumes and particles, welding fumes, Burns, Lacerations, Falls from height, Struck By's
Pipefitters	Caught Between, Struck By's, Lead fumes and particles, welding fumes, asbestos dust, burns, Falls
Steamfitters	Welding fumes, asbestos dust, burns, Struck By's, Caught Between, Lacerations, Falls from height
Carpet layers	Knee trauma, awkward positions, glue and glue vapor, lacerations, debris in eye
Concrete and terrazzo finishers	Awkward positions, Silica exposure, burns, back injury, Slips, trips and Falls
Glaziers	Awkward positions, Falls from height, Slips Trips and Falls lacerations, Back Injury, Eye injury, Head injury
Insulation workers	Asbestos, synthetic fibers exposure, awkward positions, Falls from height, Lacerations
Paving, surfacing and tamping equipment operators	Asphalt fumes, gasoline and diesel engine exhaust, heat, burns
Roofers	Roofing tar, heat, working at heights, falls, burns,
Sheet metal duct installers	Lifting heavy loads, noise, lacerations, debris in eyes, head injury



Structural steel installers	Lifting heavy loads, working at heights, Falls from heights, Slips Trips and Falls, Caught Between, Struck By, head Injury
Welders	Welding fumes, burns, eye injury
Pile driving operators	Noise, whole-body vibration
Crane and tower operators	Stress, isolation, falls
Excavating and loading machine operators	Silica dust, , whole-body vibration, heat stress, noise,
Grader, dozer and scraper operators	Silica dust, whole-body vibration, heat, noise,
Demolition workers	Asbestos, lead, dust, noise

V. List of General Hazards by Region

Region	Hazards
South East Region	Poison Ivy/Oak/Sumac
South East Region	Hurricanes/Tornadoes
South East Region	Proximity to Nuclear Power Plants
South East Region	Numerous venomous snakes (Coral, Moccasin, Copperhead, Rattler)
South East Region	Alligators on the coastal counties and sporadic further inland
South East region	Radon Gas in certain geographical areas
West Coast Region	Earthquakes
Central Region	High Winds, Cold Related Weather
West Coast Region	Heat related exposure



West Coast Region	Wild Fires
West Coast Region	Flooding/Mud Slides
West Coast Region	Venomous snakes(Rattler)
West Coast Region	Venomous spiders (Brown Recluse)
West Coast Region	Tsunami
Texas Region (All Areas)	Severe heat related exposure
Texas Region(All Areas)	Proximity to Oil Pipelines
Texas Region (All Areas)	Proximity to Natural Gas Pipelines
Dallas Area	Tornadoes
Dallas Area	Ice Storms
Houston Area	Hurricanes
Houston Area	Flash Flooding
San Antonio Area	Flash Flooding
San Antonio Area	Venomous Snakes (Various)
West Texas area	Dust Storms



Central and Southern Texas	Border Violence
Colorado Area	Hypothermia
Colorado Area	Winter heating
Colorado Area	Hail Storms
Colorado Area	Flash Flooding
Iowa Area	Hypothermia
Iowa Area	Winter Heating
Iowa Area	Flash Flooding
NE Region	Venomous Snakes (Copperhead, Timber Rattler)
Mid-Atlantic Region	Venomous Snakes, Poison Ivy/Sumac/Oak, Hurricanes Tornados, Thunderstorms w/Lightning ,Earthquakes Heat Exposure, Cold Exposure, Flash Flooding Venomous Spiders, Ice Storms, High Winds/Derecho Gang Violence, Traffic, Ticks, Snow Storms Terrorism
Great Lakes Region	High Winds, Cold Related Weather



Project Safe and Sustainable Onsite Orientation

Hardhat Sticker #: _____ Badge #: _____

The signatures below document that the appropriate elements have been discussed to the satisfaction of parties, and that both supervisor and employee accept responsibility for maintaining a safe and healthful work environment.

Print Name: _____

Sign Name: _____

Company Name / Date _____ / _____

Supervisor _____

Acknowledgement: _____

Emergency Contact _____

Name and Number: _____

The Message of “Building L.I.F.E. ®”

At Turner, we call our safety program and culture “**Building L.I.F.E. ®**” L.I.F.E. is an acronym for *Living Injury Free Every Day*. Our goal here is to create a workplace *free from any level of harm* to our workforce, our clients, and the community we work in. Only with your help and commitment can we all achieve this goal. We’re asking that you take an active role making this the safest project we can, for all of us. If you see a hazard, bring it to our attention if you can’t correct it. If you see a coworker at-risk, stop and say something. If someone approaches you because *you* are at risk, accept their help graciously, without attitude, and thank them. If you know a smarter or safer way to accomplish a task, raise it up.

You will be given ample opportunities to play an active role with safety on this project. This includes daily safety huddles where each team prepares their safe plan of work; it also includes safety committees, safety meetings, and 5-Worker Lunches where we ask for your feedback on how safety is doing on this project. We want to hear about near-misses and incidents, not so we can find someone to blame, but so we can learn from the problems that lead to the event – to prevent recurrence. Like any safety program, we have some policies you need to be familiar with, and many of them are stricter than OSHA, or any other General Contractor/Construction Manager you have worked for. If you have any questions about our expectations or any of the policies you’re about to see, please bring them up as we go along.

General	<ol style="list-style-type: none"> No one under the age of 18 is allowed to work on the Project property / construction site. A minimum 10-panel drug testing is mandatory <ol style="list-style-type: none"> Your employer must provide the results to Turner in order to attend orientation. Pre-employment/prior to receiving a hardhat sticker or ID badge Additional testing may be required Post-Incident, for cause or suspicion If tested positive or refuse to test, you will not be allowed on site Badging / orientation sticker <p>All employees on site must attend orientation after the drug screen and receive an orientation sticker.</p> <p>Many projects require a photo-ID badge per terms of subcontract agreement.</p> Every crew member must participate in a morning safety huddle to develop a safe plan of work for the shift. Throughout the day (or night) if any new tasks or changes come up that weren’t planned for at the beginning of the shift, work must stop and the plan must be revised. All personnel are empowered and encouraged to stop unsafe acts, identify unsafe conditions, and to escort non-construction personnel out of the work areas. Please care for your project teammates. No headphones, iPods, radios, etc. are permitted on the job. No streaming of music from the internet. No walking or driving while talking on phone or walkie-talkie. Zero use of tobacco policy. Zero tolerance policy for smoking in building during construction. No e-cigarettes or smokeless tobacco are allowed either. Turner may elect to establish a “tobacco zone” outside of the project. Eating is allowed only in approved areas. No glass containers are permitted onsite. A fluent interpreter must be provided and on site for any crew that has one or more non-English speaking workers. The confined spaces on this project include: _____ I will not enter a confined space unless trained and authorized by my employer. Proof of training must be provided to Turner Construction. The employer entering a permit-required confined space must arrange for on-site rescue team to be present and provide for continuous air monitoring, and if applicable, monitoring for other hazards (i.e. engulfment). <p>The list of behaviors below, while not inclusive, provides examples of conduct that is prohibited:</p>
Initials _____	



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	13. Causing physical injury to another person; 14. Making threatening remarks; 15. Aggressive or hostile behavior that creates a reasonable fear of injury to another person or subjects another individual to emotional distress; 16. Intentionally damaging employer property or property of another employee; 17. To the maximum extent permitted by applicable law, the possession on Company premises or while on duty of firearms, clubs, explosives, or other weapons that could be used to cause harm to personnel or property, other than that used to perform specific construction activities. This would include Turner projects and client-owned buildings and facilities we work in, project-provided parking areas, and while in the execution of work duties.
EEO Policy <hr/> Initials	1. Turner provides equal employment opportunity (EEO) to all persons based on qualifications and merit, without regard to race, sex, gender identity, sexual orientation, pregnancy, childbirth and other pregnancy-related conditions, color, national origin, ancestry, age, creed, religion, citizenship, marital status (including registered domestic partners), parental status, disabilities, genetic information, status as a recently-separated veteran, Armed Forces service medal veteran, disabled veteran, active duty wartime or campaign badge veteran, or any other protected characteristic or status.
Policy Statement Against Harassment <hr/> Initials	1. Turner will not tolerate unlawful harassment, including sexual harassment or harassment on the basis of race, sex, gender identity, sexual orientation, pregnancy, childbirth and other pregnancy-related conditions, color, national origin, ancestry, age, creed, religion, citizenship, marital status (including registered domestic partners), parental status, disabilities, genetic information, status as a recently-separated veteran, Armed Forces service medal veteran, disabled veteran, active duty wartime or campaign badge veteran, or any other protected characteristic or status.
Incident Reporting <hr/> Initials	1. Any injuries / illnesses / near misses must reported to your supervisor <u>immediately</u> after the event, <u>if physically possible</u> . Those supervisors are to verbally report the incident to Turner immediately after stabilizing any injury or making safe any unsafe conditions. 2. An incident investigation report must be filed with Turner within eight (8) hours after an accident. 3. If sent to a doctor for treatment all, follow-up appointments must be kept. 4. A Temporary Modified Duty policy is in place. 5. The worker must strictly follow any and all work restrictions issued by doctor.
100% 6-Foot Fall Protection (Regardless of Trade) <hr/> Initials	1. 100% FALL PROTECTION required where a 6-foot fall exposure exists (includes all trades). See additional ladder rules below. 2. ZERO TOLERANCE – For Fall Violations 3. Snap-hooks on lanyards must be double locking. Self-Retracting Lanyards (SRLs or yo-yos) or fall limiting devices are typically required. Whichever is connecting device is used, two connecting devices are required on each harness (twin-leg). Short lanyards may be required in some types of scissor and aerial lifts. The competent person from each trade must specifically identify fall protection methods and equipment on JHAs and PTPs. 4. Gear to be inspected prior to every use. Contact your supervisor immediately if gear is damaged. DO NOT USE DAMAGED GEAR. 5. Warning lines are to be a min. of 15 feet back from the edge. (see criteria in Turner Safety Manual) 6. Tie-off point must hold 5,000 LBS per person. 7. 100% tie-off when working from extensible / articulating boom aerial lift. 8. Employees must be trained on the use of fall protection. Provide proof of training to Turner. 9. Vertical or horizontal rebar or other impalement hazards shall be protected. 10. Any hole 2" or larger must be covered, secured, labeled (supporting 2X max the indented load) 11. Scaffolds <ul style="list-style-type: none"> A. Must be built under supervision of competent person who has necessary certifications (w/ 100% Fall Protection while erecting) B. Cross-bracing cannot be used as a ladder, or instead of either a top or mid-rail. You must have both a top and mid-rail. C. Scaffold must be inspected before each shift by the Subcontractors competent person and tagged/dated as safe. If you climb onto a scaffold not tagged and dated as safe, you may be removed from the jobsite. All non-compliant scaffolds must be "red-tagged" out of service. D. 100% tie off when working from all types of lifts that have a manufactured tie off point. Dual action controls require that there be two separate actions to activate the lift. If it arrives on site and does not have dual action controls, then it must remain inoperable until a Dual action control is installed.



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	<p>E. Mobile scaffolds must have the wheels locked when in use and require guardrails at 4 foot in height.</p> <p>F. Scaffold stairs shall be installed instead of a ladder to access frame and system scaffolds. If a ladder is required for some reason, ladder access points must only be at “swing-gates” on the ends of the frames, or through spring-loaded deck-hatches.</p> <p>12. Standard Railing</p> <p>A. Top edge height of top rail must be 42” to 45” above the walking/working level and all systems must include a toe board and midrail. Cable rails must not deflect more than 3” with 200 lbs applied.</p> <p>B. Guardrails will not be used as a horizontal anchorage for personal fall arrest equipment. Do not tie off to guardrails</p> <p>C. Guardrails must be provided at floor openings and open sides, or personal fall protection must be used.</p> <p>D. Wood rail stanchions (or posts) shall not be more than 8 foot on center.</p> <p>E. Wire rope guardrails – min 3/8 inch cable, flagged every 6 feet, cannot have more than 3 inches of deflection, 3 clips are required at each termination, no open turnbuckles</p> <p>13. Ladders</p> <p>A. Turner’s Ladders Last Policy states that ladders are not to be used on this project unless no other means of accessing elevated work is feasible. The tool of choice for elevated work is a mobile elevated work platform (MEWP) such as a scissor or aerial lift. Where MEWPs cannot be used, scaffolds can be used.</p> <p>B. Where ladders must be used, a Ladders Last Permit must be completed by the contractor and approved by Turner. The permit must be hung on the ladder and the ladder inspected daily.</p> <p>C. No aluminum or wood ladders are permitted on the site.</p> <p>D. Never use a step-ladder while it’s still folded up.</p> <p>E. Never use the top two (2) steps or the top of the ladder.</p> <p>F. Never store material or tools on the ladder</p> <p>G. Use the 3-point rule: 2 hands and a foot or vice versa to be in contact with ladder at all times. Keep belt buckle between side rails.</p> <p>H. Fall protection is also required when above 4’ on a ladder, even if three points are maintained.</p> <p>Turner will approve perimeter access points for material handling. Personal fall protection must be installed and used before cables or rails are taken down, or holes uncovered. Barricade the area, place signs, and leave a spotter.</p>
<p>Safety Enforcement</p> <p>Initials</p>	<p>1. All personnel are encouraged to ask questions and report actual and perceived hazardous conditions to site supervision. Perceived hazardous conditions may need further clarification and hazard assessment. . If you have any questions or concerns, please ask for assistance.</p> <p>2. There is a “Safety Enforcement” Fine System in place on this project.</p> <p>A. You are accountable for your actions on this project.</p> <p>B. Monetary fines imposed upon your employer for worker safety violations or complacency w/ regard to “minimum” safety rules</p> <p>C. \$250.00 - \$5,000.00 – depending upon severity of violation.</p> <p>3. All OSHA regulations will be strictly enforced. Turner has many policies stricter than OSHA and you need to be familiar with these.</p> <p>4. Disciplinary Procedures – 3 strikes policy</p> <p>1. Verbal = Orientation</p> <p>2. Written</p> <p>3. Termination</p> <p>4. Turner retains the right to have anyone removed from site, based on the nature of the violation, without the 3 strikes</p>



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<p>Emergency Procedures</p> <hr/> <p>Initials</p>	<ol style="list-style-type: none"> 1. In the event of an emergency <ol style="list-style-type: none"> A. Notify job foreman immediately B. Give the exact nature of the emergency (i.e. broken leg, fire, etc.) C. Give the exact location by area, column number or other easily recognizable terms D. Stay on the phone until Safety has confirmed that you have provided accurate information E. If an evacuation is not required, stay on the scene to brief emergency personnel upon their arrival. 2. Evacuation Procedures <ol style="list-style-type: none"> A. Our project evacuation signals are: (example: 3 horn blasts will indicate site is to be evacuated) B. Proceed in a calm, orderly manner to the designated safety zone. <ol style="list-style-type: none"> 1. <u>Evacuation Gathering Points are located ...</u> 2. Report to your designated foreman/superintendent in designated area for head count. C. Do not leave the emergency gathering point until instructed to do so by your supervisor. D. All dangerous and/or emergency situations must be reported to Turner staff immediately, if feasible. E. Call 911 for ambulance or fire departments as when necessary. F. Where is the location of your first aid kit and fire extinguishers? G. For confined space entry, trained emergency rescuers must be on site during the entry.
<p>Personal Protective Equipment</p> <hr/> <p>Initials</p>	<ol style="list-style-type: none"> 1. 100% Hardhat Protection, Non Metallic, <u>REQUIRED AT ALL TIMES. ANSI approved</u> 2. 100% Eye Protection (ANSI Z87.1) <u>REQUIRED AT ALL TIMES.</u> 3. Hard sole safety shoes or boots are required, no sneakers or soft shoes are allowed, ANSI Z41.1. Safety-toed boots and/or metatarsal protectors must be worn as dictated by the hazard assessment. Safety-toed boots required for erection, demolition, masonry and rigging, at a minimum. 4. Long pants in good condition, no shorts allowed 5. Shirts must have sleeves at least 4" long 6. Gloves are required at all times unless the Job Hazard Analysis specifically states they are not required because they create a greater hazard (using rotating parts, etc.). Cut-resistant gloves are required when using knives or handling sharp material/objects. Additional hand protection may be required depending on the hazard assessment. Appropriate arm protection is required during operations where the arms are exposed to cut hazards (i.e. Kevlar, Dyneema sleeves, etc.). Examples of these activities are working around metal studs and pull boxes, tight confines as between wall studs or above ceiling and all demo activities. These operations shall be identified on the JHA/PTP. 7. Ear protection as required when exposed to noise above 85 DBA or when noise levels require you to raise your voice when talking to someone 3 feet from you. 8. Face-shields required when cutting / grinding / chipping, or working above your shoulders; or when the hazard exists of projectile particles. Goggles required when there is a splash or dust hazard such as working with chemicals, sawing lumber and grinding. Both may be required if both hazards exist. 9. No loose clothing or jewelry 10. High visual, safety vests, shirts or jackets shall be worn as the outermost apparel by all employees, 100% of the time. ANSI Class 2 (0-44 MPH) and Class 3 (45 MPH or more) outerwear must be worn whenever working on or near (within 10 feet) of a roadway. 11. Any contractors requiring the use of dust masks and/or respirators must submit a written respiratory protection program Turner. This program must address medical surveillance, fit testing, etc. Voluntary usage of dust mask type respirators used by employees must also be included in the respiratory protection program and shall meet or exceed OSHA standards. 12. Regular utility-cutters (like box-knives) are not allowed. All utility cutters should be equipped with self-closing blade guards or self-retracting blades that engage when the blade loses contact with the cutting surface.
<p>Electrical/LOTO</p> <hr/> <p>Initials</p>	<ol style="list-style-type: none"> 1. Industrial heavy-weight cords (14 gauge or heavier) with proper grounds are to be used at all times. 2. 100% Ground Fault Circuit Interrupter (GFCI) Protection. 3. Inspect all cords and welding leads before each use 4. All electrical and mechanical systems are to be considered energized. When pressurizing any pipe, vessel or system, refer to Turner's procedures. 5. All panels, boxes, switches and receptacles containing live wires must have a cover. 6. NEVER work on live electrical panels or parts without prior approval from Turner. Complete the Turner Energized Work Permit and submit prior to the work taking place. 7. LO/TO – Single-key locks required (cannot have multiple keys for a lock). Each worker must apply a lock when exposed. 8. NFPA 70E compliance is required for energized work. This includes testing and commissioning activities, as well.



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Equipment <hr/> Initials	<ol style="list-style-type: none"> 1. Proper training and certification is required prior to operating any equipment. 2. Speed limit on site is 5 mph. 3. A spotter is mandatory when a vehicle or equipment has restricted view. A spotter is necessary when backing up any vehicle or equipment on site. 4. Backup alarms must be present on all required vehicles. 5. Horns and lights are recommended for all equipment. 6. Always follow the manufacturer's operating instructions for all equipment and tools used on this project. 7. Seatbelts must be worn at all times. 8. The use of cell phones is prohibited while the machine or vehicle is in motion. 9. The forks of a forklift cannot be used for free rigging. 10. When off-loading trucks with forks or crane, no person should be on the truck bed or around the truck after rigging. Set up a safe-zone around the truck with tape or barricades. Use a spotter to keep people out.
Cranes <hr/> Initials	<ol style="list-style-type: none"> 1. Awareness of overhead loads – listen for horns. Never stand or walk under an elevated load. 2. Awareness of crane swing radius (should be flagged off). 3. Cannot operate a crane within 20' of any power line. 4. Rigging must be inspected before each use by a <u>qualified rigger</u>. Damaged rigging must be removed from service. 5. Crane operator must submit operator certifications (NCCCO or NCCER) 6. Employees cannot signal a crane unless trained and certified, and authorized to do so. 7. Each rigger & signal person must be qualified & proof of training given to Turner Construction
Barricade Tape <hr/> Initials	<ol style="list-style-type: none"> 1. Barricaded areas must have posted signage on each side of the area. Signage should identify the hazard, the controlling contractor for the area, a point of contact and his or her phone number. 2. Types of Tape <ol style="list-style-type: none"> A. Red Danger – Imminent Danger exists. Only authorized personnel performing actual work are to be allowed in this barricade tape area. The only exception for entry into a red area is with prior permission of those authorized to work within the area B. Yellow Caution – a hazard exists that would warrant Caution. A yellow area can be accessed by anyone who is authorized to be on the job site, and who stops to observe the existing hazard and takes the proper precautions prior to entering the tape barricade area.
Training Requirements <hr/> Initials	<ol style="list-style-type: none"> 1. Must be trained / certified to operate forklifts, aerial lifts, cranes, and use scaffolding, etc. 2. Contractors are required to provide workers that are trained as required by OSHA standards and site policies. 3. All workers are to be trained by their employer for the task and/or tool/equip being used – ladders, scaffolds, excavations, etc. 4. No worker may lift more than 50 pounds, unassisted. Use mechanical means first.
Hand & Power Tools <hr/> Initials	<ol style="list-style-type: none"> 1. All drills, grinders, etc. that are designed with guards and/or control bars must have them in place when the tool is in use. The grinding wheels must be rated to meet or exceed the RPM specifications of the grinder. 2. Work stations are to be elevated. This includes saws, pipe benders and threaders & other work activities. 3. Powder Actuated Tools - No lead based shot is permitted onsite 4. Tools are to be used the way the manufacturer intended. Do not modify any tool. 5. For tools that would normally create dust, Turner requires them to have integrated protective measures to capture or minimize the dust, such as HEPA vacuums or water-spray, etc.
Hot Work <hr/> Initials	<ol style="list-style-type: none"> 1. The contractor performing hot work will be required to have a charged and inspected 20 pound ABC dry chemical fire extinguisher present in the work area. 2. Appropriate permit procedures, shields, and blankets shall be used when developing site specific fire prevention programs. 3. Subcontractor is required to implement a fire-watch during all burning operations and for a minimum of 30 minutes following completion. 4. Hard Hats are required while welding. 5. Safety glasses are required under the shield when chipping or grinding 6. Cylinder Storage must be stored upright and properly secured. When not in use, disconnect hose/gauge assemblies and cap the cylinder. Stored cylinders must have a ½ hour fire rated barrier 5 feet tall or be stored 20 feet apart. Propane tanks cannot be stored in any building. (Turner must be notified prior to propane used onsite) All torch carts are to have a fire rated barrier between the cylinders. 7. Anti-flashback devices are to be located at the torch head & at the cylinders 8. Hot Work activities must be pre-approved by Turner (Permit to be issued). A fire watch must be present where sparks could fall (multiple levels if necessary).



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<p>Excavations</p> <hr/> <p>Initials</p>	<ol style="list-style-type: none"> Any excavation greater than 4' must be sloped, shielded or benched properly. The bottom of the trench box must be within 2 feet of the bottom of the trench. The top of the trench box must stick up 18 inches above the slope or the bench. The box cannot be moved while workers are inside. Access must be provided by a ramp or stair. Travel distance to that means of access/egress must not exceed 25 feet. Any excavation (includes trenches) must be barricaded off with orange fence or equivalent, regardless of depth. You cannot bench Type C soil. Before you dig or drill, complete a Turner "Ground Penetration Request Form." Your utility locator service must be notified days in advance, as well. Fall protection is required at the top of excavations greater than 6 feet deep when the slope is less than 45 degrees.
<p>Hazard Communication / GHS</p> <hr/> <p>Initials</p>	<ol style="list-style-type: none"> This employee, by his initials in this section acknowledges that he/she has been trained by their employer, on hazard communication and, Turner has reviewed the location of Chemical Inventory Lists and Safety Data Sheets with me. You must provide Turner a Safety Data Sheet for any chemical you bring onto the project. Turner will coordinate the sharing of Safety Data Sheets (SDS) between contractors. If you transfer chemicals from one container to another, you must provide a proper chemical label complying with OSHA. Renovation projects often have health hazards in the form of asbestos, lead, PCBs, Mercury, etc. The known health hazards on this project include: _____ If this project contains known health hazards, I certify that I was given training on those hazards including their identity, location, hazards of exposure, and control methods used to protect me. If I discover any "suspected" hazardous material, I'll immediately stop work and bring it to the attention of my employer.
<p>Construction Waste Management</p> <hr/> <p>Initials</p>	<ol style="list-style-type: none"> All waste leaving this project is tracked on Turner's Online Waste Tracking (OWT) system. Strict compliance with the project Construction Waste Management Plan (CWMP) is required. The recycling goal is ____%. The construction and demolition dumpsters on this project are (co-mingled) (site-sorted). Materials recycled include, at a minimum: <ol style="list-style-type: none"> Wood: pallets, wood-framed boxes, temporary lumber, etc. Concrete: concrete, block, brick, asphalt Metal: scrap metal, metal studs, metal pipe, etc. Cardboard, paper Drywall: drywall, mold board, (NO Dens-Glass) Construction Trash: food waste, sweepings, non-recyclable waste, etc. Collect and sort your construction waste throughout the workday and transport the waste to the appropriate dumpster at the time established by your Foreman or Project Manager. All Subcontractors are required to recycle to the maximum extent possible as a part of their Contracts using Turner's OWT tool. In cases of non-compliance, only the Subcontractor(s) responsible for contaminating dumpsters (placing waste in the wrong dumpster) will be responsible for fines, additional tipping fees, or other penalties as may apply.
<p>Indoor Air Quality</p> <hr/> <p>Initials</p>	<ol style="list-style-type: none"> Strict compliance with the project Indoor Air Quality (IAQ) Management Plan is required. Safety Data Sheets (SDS), along with VOC content, of all adhesives, sealants, coatings, paints, carpets, composite woods, etc. must be submitted for review and approval prior to these products being brought on site. Stored material shall be covered, stored off of the deck, and kept in a dry environment. Quantities should be limited to what can be installed in a reasonable time (e.g. two weeks or less). Changes in finished areas should be treated as renovations. For large changes, install temporary dust protection to separate the work area from the finished space. The work area should be kept negative and a HEPA filter should be used to filter the air prior to it leaving the space. The temporary protection and filter system should be approved by a Turner superintendent before beginning work. Once the work is complete, the area should be thoroughly cleaned and the temporary protection should be removed. For small changes, a vacuum with a HEPA filter should be used to collect any dust that is generated and the areas should be thoroughly cleaned after the work is complete. All subcontractors will be required to use sweeping compound. All cleaning products used on the project must comply with Green Seal Standard GS - 37 for Industrial and Institutional Cleaners. Mold and moisture control is a key to proper indoor air quality. If possible, drywall activities should not begin until the building is watertight. If drywall must start before the building is watertight, moisture resistant board should be used. Notify Turner if you see any wet building materials (before mold grows).



<p>Stormwater Management</p> <hr/> <p>Initials</p>	<ol style="list-style-type: none"> 1. The SWPPP requirements including Best Management Practices (BMP's) were reviewed and will be followed as required by the SWPPP. 2. The SWPPP drawings, project sequence and how sequencing will affect BMP locations were reviewed. 3. Notify Turner of any disturbances of the Best Management Practices (BMP's) including silt fences, vehicle mud removal areas, vegetative cover, other sediment and erosion controls. 4. Ensure all concrete/cement washout is performed at designated locations and into designated containers, notify Turner personnel immediately if washout is not adequately containing wash water and stop washout activity 5. All site dewatering must be performed in a manner compliant with the SWPPP and all pump discharge locations must be previously approved by Turner. 6. Inspect all equipment and chemical storage containers for leaks as well as excess grease/grim/oil/fuel, if any of the above are discovered ensure that mechanics are notified (if necessary) and equipment/containers are wiped clean and containments disposed of properly. 7. Ensure parked equipment and chemical storage containers are parked/stored in locations previously approved by Turner and are identified on the SWPPP map. 8. Use only designated areas for equipment maintenance and wash down. 9. Minimize the generation of dust and the tracking of sediment to off-site paved areas.
<p>Nothing Hits the Ground</p> <hr/> <p>Initials</p>	<p>FABRICATION:</p> <ol style="list-style-type: none"> 1. All material fabrication shall be performed at a work station between 30 and 39 inches, off the floor. 2. Work station shall be mobile and include a fire stop directly behind all chop saws. 3. Rubbish containers shall be mobile and located directly adjacent to the work station. 4. Mobile rubbish containers must be made available for subcontractors work. <p>HOUSEKEEPING:</p> <ol style="list-style-type: none"> 1. All rubbish shall be disposed of as it is generated and be immediately placed in a mobile rubbish container provided by the subcontractor. No trash/scraps to touch the floor. 2. Cordless power tools are required unless the subcontractor can demonstrate a hardship or need to use tools with power cords. 3. The subcontractor is required to elevate off the ground all power cords, hoses and welding leads in order to minimize tripping hazards on walking/working surfaces. They must be elevated at least 8 feet. Any sub using these is responsible for purchasing/installing their own means of support. 4. Debris is not allowed to be consolidated on the floor. 5. Maintain clear paths to move materials and facilitate emergency egress. 6. When stilts are allowed on a project, the floor must be broom swept with no trip hazards. (Cords, material, screws and trash). Turner will provide a stilt-use permit where they are allowed. <p>MATERIAL HANDLING/ STORAGE:</p> <ol style="list-style-type: none"> 1. Material may not be stored within 10 feet of the building perimeter or adjacent to shafts or stairwells. 2. All material laydown areas must be coordinated and designated by Turner. 3. Material must be stored to promote mobility of material. All materials including pipes, conduits, metal fabrications and steel framing are to be stored on rolling racks or similar means of conveyance. Bulk material should be palletized to allow for easy mobility using a pallet jack. 4. Just in Time" delivery required to minimize clutter. Nothing should be stored on a floor that cannot be installed within one week. 5. Heavy material such as glass and drywall must be loaded so as not to overload the structure. The subcontractor is required to do a floor loading analysis for submission to Turner for review and approval. 6. Any contractor creating floor holes must cover those holes with covers capable of supporting 2x the intended load. Covers shall be installed flush to allow easy movement of rolling materials and trash hoppers. There are manufacturers that make these covers for smaller diameter holes ("Paragon" and "Hole Solution" are two). Turner does not endorse any manufacturer or product. 7. The biggest contributor to construction injuries is when we manually handle material (carrying, pushing, and pulling). Our goal is to identify and use mechanical means of moving material and tools whenever possible. This might include cranes, forklifts, dollies, carts, etc. It means never carrying materials up and down stairs. It definitely means right-sizing the loads we are handling – such as not lifting more than 50lbs or not overfilling tool buckets or trash cans with heavier materials. Buy smaller bags of grout and mortar instead of the big 80lb bags. Find ways to work smarter. Not harder.
<p>OHSAS 18001 Safety Management System</p> <hr/> <p>Initials</p>	<ol style="list-style-type: none"> 1. OHSAS 18001 is an internationally recognized health and safety management system to improve safety performance of a company and control the risks associated with their operations. 2. Turner has received registration in OHSAS 18001 by the third party auditor NSF, International as of March, 2014. 3. Achieving registration through OHSAS 18001 demonstrates Turner's commitment to elevate the company's already mature and advanced safety standards and programs. OHSAS 18001 registration also confirms Turner's dedication to improving Occupational Safety and Health performance through control and management of associated risks and hazards in the workplace. 4. Turner truly cares about your well-being while working on this project. 5. Turner wants to see you go home the same way you came to work. 6. Your opinion matters on this project! If you have a question or concern related to safety and health, please ask a Turner representative.



Project Safety Staffing Policy

I. Policy Statement

Full time, Turner project safety staff is required on all projects with an initial contract value of \$25 million dollars or greater. It is recommended that the safety staff be assigned prior to the beginning of work, as with other site staff. Additional safety staff may be required when project size is greater or risk management plan dictates a need.

II. Roles and Responsibilities

This safety staff person should perform the following functions prior to and during the life of the project:

- Assist the Business Unit Environmental, Health, and Safety Director in creating the site-specific safety program
- Setup and implement substance abuse testing
- Create and implement a project safety orientation
- Attend pre-bid meetings to inform subcontractors of specific project safety requirements
- Establish safety pre-planning meetings with all subcontractors and assist the Project Staff in placing meeting times in the project schedule
- Meet with and coordinate response from local EMS officials
- Conduct project safety audits using the Predictive Solutions SafetyNet Reporting System
- Conduct toolbox safety meetings for Turner employees
- Establish and maintain site record keeping files
- Establish and encourage Project Staff safety auditing requirements
- Ensure that all precautions / requirements found in the environmental site assessment are complied with
- Other safety requirements as deemed necessary by the BUEHSD and / or Project Staff

III. Subcontractor Safety Requirements

All subcontractors must have completed an OSHA 30 hour class. One person must be certified for all contracts under \$5M, and two people must be certified for contracts over \$5M. The 30 hour certified person(s) must be on-site 100% of the time. This OSHA 30 hour certification must be updated through Turner's Safety Update Training every two years through Turner University.

- The Subcontractor shall provide a full time dedicated Safety Manager (non-working) which shall be in constant attendance when its onsite workforce reaches 20 workers, not including office staff, or the Contract is five million (\$5M) or more. Safety Manager shall meet the following requirements.
 1. Is qualified to recognize safety hazards; and
 2. Has the authority to take corrective action; and
 3. Possesses current certifications in first aid, CPR and AED; and
 4. Possesses a recent OSHA 30-hour training completed within the last 3 years (if not within the last three years Turner's 2 year Safety Update Training can be completed through Turner University); and
 5. Has an academic degree in safety or one of the following certifications, CSP, ASP, CHST, STS-C designation and has a minimum 5 years of prior work history as a designated construction safety manager. Turner reserves the right to approve or deny the subcontractor's fulltime safety representatives for the project.
 6. Multiple Safety Managers are required for every additional 50 onsite workers engaged in construction activities after the initial requirement at 20 workers (see table for ratio reference).



Full time dedicated Safety Managers required	When Onsite Workers reaches:
1	20
2	70
3	120
4	170

7. At a minimum the Subcontractor Foreman or Safety Manager will be requested to:
- Ensure their employees attend jobsite orientation before start of work on the project.
 - Take the lead in recognition and abatement of hazardous situations.
 - Conduct a daily "Safety Huddle" prior to the start of each shift and submit a Daily Pre Task Plan (PTP). Report each morning prior to the start of work.
 - Perform and document weekly safety inspections (1 per week at minimum).
 - Conduct at least one monthly safety tour with their Safety Director and submit findings to Turner.
 - Ensure that Competent Persons submit, at a minimum, the below listed safety inspections at the designated frequency to the Turner's Project Superintendent or Safety Manager.

<u>Inspection</u>	<u>Frequency</u>
Fall Protection	Before Each Shift
Excavations	Before Each Shift
Scaffold	Before Each Shift
Crane Inspections	Before Each Shift
Confined Space	Before Each Shift
Hot Work	Before Each Shift
Heavy Equipment	Before Each Shift
GFCI	Weekly
Personnel Hoist	Per OSHA Reqs.
Dig Permit	Before Each Shift
Tools Box Talks & Report	Weekly

- Conduct and document toolbox meetings on a weekly basis.
- Issue minutes of the weekly toolbox meeting to Turner.
- Effectively utilize and train employees in pre-planning, recognition, and remediation of hazards.
- Each subcontractor, regardless of tier, is to submit in writing toolbox meeting minutes containing the following:
 - Name of subcontractor and date.
 - Name of Subcontractor Safety Manager.
 - Name of employees attending.
 - Name of employees onsite not attending.
 - Number of employees on their payroll that day.
 - Subjects discussed.
 - Safety observations of employees.
- Attend project safety meetings.



- l) Enforce disciplinary measures when need arises for their employees.
 - m) Each subcontractor is responsible for all of their subcontractors and suppliers, regardless of tier, compliance with the Project Safety Program
- Multiple Safety Managers are required for every additional 50 onsite workers engaged in construction activities after the initial requirement at 20 workers (see table for ratio reference).



Regulatory Inspection Procedure

I. Policy Statement

The purpose of this procedure is to provide guidance to Turner personnel on how to respond to any regulatory agency inspection on our projects. In addition, this procedure should be utilized for advance preparation for regulatory inspections.

II. Procedures

1. Turner will strive to maintain a positive working relationship with all regulatory agencies. By law, any regulatory agency or compliance officer (Authority) has the right to enter and inspect any place of employment during normal working hours. Also, by law, Turner has the right to deny entry into our project. It is Turner's policy NOT to deny entry and to fully cooperate with Regulatory Inspectors. The BUEHSD must be contacted if the project team intends to deny entry.
2. The Site Safety Manager or Project Superintendent should meet with the Authority to determine the nature of their visit and to verify credentials, if necessary.
3. The BUEHSD must be contacted immediately upon notification of a regulatory agency inspection. The Turner Risk Management Reporting Form should be used and is available in the safety section of the TKN2 Document Management System.
4. The CO or Authority has the right to enter any place of employment accompanied or assisted by outside engineers or specialists.
5. The CO or Authority is entitled to bring cameras, video equipment, tape recorders and other testing equipment that is required to perform their audit.
6. Turner has the right and duty to ensure the CO or Authority is escorted for safety, coordination and property protections. A CO must never be allowed on site without an escort.
7. Opening conference guidelines:
 - Ensure that the CO or Authority presents all of the required information in the opening conference.
 - Ask clarifying questions to thoroughly understand the nature of the inspection. If the inspection is due to a complaint, obtain a copy of the complaint letter.
 - Inquire how long the CO anticipates the inspection will take so you may estimate your time commitment and level of resources needed to support the inspection.
 - Verify if the CO or Authority will need to perform any sampling and ensure that action is monitored by a Turner Construction Staff Member.
 - Provide only the specific documentation requested.



8. Documentation – the following is a list of documentation that is often requested during a regulatory agency inspection:
 - Written Accident Prevention Program
 - Site Specific Safety and Health Program.
 - Subcontractor Accident Prevention Programs
 - OSHA 300 Log
 - Hazard Communication Program
 - Safety Committee Meeting minutes
 - Safety Training Records
 - CPR / First Aid Training Records
9. A Turner representative must remain with the CO or Authority at all times unless they request privacy for interviews with employees or management. Turner should remind employees that they are under no obligation to speak privately with a CO or Authority.
10. A CO or Authority may request certain documents and duplicate copies may be turned over with approval from the Business Unit Environmental, Health, and Safety Director.
11. Discussions and negotiation regarding distribution of company confidential documents will involve the BUEHSD. All documentation with employee's names will be blackened out to protect confidentiality.
12. During the walk around portion of the inspection, all attempts to correct apparent violations should be made by Turner staff and/or the hazard creating subcontractor.
13. The CO or Authority will take photographs, videos and measurements during the walk around phase. The Turner representative must duplicate each photograph, video and measurement and document the circumstances concerning the alleged violation. Additional photographs should be taken at different angles to provide additional views.
14. Do not volunteer any additional information than what is necessary to answer a question concerning an alleged violation.
15. During the closing conference, the CO or Authority will likely state if there will be a follow-up inspection from another agency and any apparent violations noted during the walk around phase.
16. All documentation must be forwarded to Turner Risk Management (via the Business Unit Environmental, Health, and Safety Director) at the conclusion of the inspection.



Turner Construction Company
OSHA Inspection Form

Project: _____ Project No.: _____

Project Superintendent: _____

Project Safety Manager/Coordinator: _____

Inspection Dates & Times: _____

I. Pre-Inspection

A. Person & Title contacted by OSHA _____

B. Did inspector show his credentials? Yes () No ()
If No, comment: _____

C. Names of OSHA Inspector(s) and their Area Offices: _____

D. What was the reason for the inspection?
1. Employee complaint? Yes () No ()
(If yes, attach copy. OSHA is required by law to give you a copy)
2. Random scheduled inspection? Yes () No ()
3. Other (comment): _____

E. Did OSHA review record keeping: Yes () No ()
1. Required OSHA poster, was it posted? Yes () No ()
2. Turner's Project Safety Program Yes () No ()
3. OSHA Form #300: Yes () No ()
4. Minutes of Project Safety Meetings: Yes () No ()
5. Minutes of Weekly Tool Box Talks: Yes () No ()
6. Copies of Safety Coordinator Inspection Reports: Yes () No ()
7. Hazard Communication Program: Yes () No ()
8. Correspondence to contractors informing them to
correct unsafe working conditions: Yes () No ()
9. Other (comments): _____

II. Opening Conference

A. Names of Contractors, their representatives and titles:
(or attach a list) _____



Turner Construction Company OSHA Inspection Form

III. Inspection Tour

- A. Who from Turner accompanied the OSHA Inspector? _____
Who else joined the OSHA Inspection Group? _____
- B. Did the Inspector take any photographs? Yes () No ()
Did Turner take the same photographs? Yes () No ()
- C. Were safety hazards and unsafe acts observed? Yes () No ()
If Yes, what were they and who had responsibility? _____

- D. Was immediate corrective action taken? Yes () No ()
If No, comments: _____

- E. Special comments regarding inspection: _____

IV. Closing Conference

- A. Did OSHA hold closing conference with Turner? Yes () No ()
With other contractors? Yes () No ()
- B. Names of contractors, their representatives & titles:
(or attach a list) _____

- C. What alleged OSHA Violations were discussed and with whom?
(or attach a list) _____

Note: It is of the utmost importance that correct assignments of OSHA Violations are made at this time. Neglecting this shall cause contesting of citations that may be wrongfully issued to The Turner Construction Company.

Project Supt/Coordinator/Safety Manager

Date

This OSHA Inspection Report is to be started at the beginning of and completed immediately after an OSHA inspection.

Orig: Business Unit Environmental, Health, and Safety Director
cc: Business Unit Operations Manager
cc: Turner Risk Management (cdeprater@tcco.com, acboyd@tcco.com, rvargo@tcco.com)
cc: Compliance rpreiss@pecklaw.com



Safety Enforcement Penalty Guidelines

I. Policy Statement

To assist in Turner's efforts to provide a safe workplace, the following violations and penalties associated with them are to be included and enforced on all projects, at the discretion of the local Business Unit. Once a fine is assessed it must be collected.

	<u>Turner Employees</u>	<u>Subcontractor Employees</u>
1. No Hard Hat	1st Offense - Written Warning 2nd Offense – Discharge	\$500.00 Fine
2. No Safety Glasses	1st Offense - Written Warning 2nd Offense - Discharge	\$500.00 Fine
3. Remove Guardrail Protection Without Replacement	Discharge	\$2,500.00 Fine
4. Remove Opening Protection Without Adequate Replacement	Discharge	\$2,500.00 Fine
5. Unsecured Compressed Gas Cylinders	-----	\$1,000.00 Fine
6. Concrete coring holes in deck left unprotected.	1st Offense - Written Warning 2nd Offense - Discharge	\$300.00 per hole
7. Open Electric Panels	-----	\$1,000.00 Fine
8. No Fall Prevention	Discharge	\$5,000.00 Fine
9. Other violations	Discharge	\$500.00 Fine

Project signage outlining this policy is to be created and conspicuously displayed at your job site. Fines collected shall be added to the project safety recognition program. Fines will be assessed to the Employee's company regardless of whether the individual is discharged. Any fines collected may only be used for the project's safety incentive program.

NOTE: The above Penalty Program is only a sample and a job site-specific program should be written into each subcontract. Copies of the policy shall be given to the Turner Business Unit EH&S Director for approval.



SafetyNet Operational Guidelines

I. Procedures

It is the responsibility of the Business Unit Environmental, Health, and Safety Director and the Operations Manager to ensure SafetyNet is fully implemented and used with in their organization. The SafetyNet link and new user request link can be found on TKN2 at Turner Resources / Safety. Specific requirements shall be detailed in the Business Unit Annual Action Plan. Below is a recommended protocol. In addition, the OM's and PX's are required to review all related inspection information at each ORM or other project based meeting. Information shall be shared with the entire team and specific action plans shall be developed and implemented as appropriate.

1. Minimum auditing requirements are as follows:

- a) Project Mangers – 1 inspection per project per month.
- b) Business Unit Environmental, Health, and Safety Directors
 - Monthly inspections for each project
 - Projects in the following phases of work require monthly reports; excavation, superstructures and exterior walls
- c) Superintendents – 1 inspection per week (only 1 person)
- d) Project Safety Managers
 - 1 project – 3 inspections per week
 - 2-4 projects – 1 inspection per project per week.
 - 5-10 projects – 2 inspections per project per month.

Note: the above are minimum requirements and at the Operations Manager's and BU EH&SD's discretion, the frequency of inspections will be increased, especially if incidents on a given project are trending in a less than favorable direction.



Safety Roles and Responsibilities

Effective implementation of the Turner Construction Company's Comprehensive Safety Resource Manual requires teamwork. The Company's senior management is committed to fulfill this program through each and every Business Unit. The following outlines the role of each.

Business Unit General Manager

- Implement a culture for establishing a positive attitude towards safety by all Turner personnel.
- Ensure Business Development Manager's compliance with Turner's safety program and policies.
- Ensure compliance reporting requirements are met for regulatory inspections.
- Market Turner's safety program to owners.
- Ensure Operation Manager's compliance with Turner's safety program and policies.
- Ensure adequate funding for the safety program.
- Participate in safety related programs.
- Begin all senior staff meetings with a discussion of safety.

Operations Manager

- Maintain an environment where safety is a core value.
- Ensure cooperation and support of the Business Unit Environmental, Health, and Safety Director by all staff.
- Make safety attitude, management and implementation a primary focus on performance evaluations.
- Develop a procedure to establish consistency of safety evaluations of key personnel, including management, engineering and field staff, from project-to-project.
- Review safety at all Operation Review Meetings.
- Ensure that all personnel are given clear job descriptions and performance criteria, including adequate and proper training to implement Turner's safety policies as required by their job responsibilities.
- Participate in safety related training programs. Keep current on new legislative policies for OSHA, and new Turner policies and requirements.
- Require full use of the SafetyNet inspection program by Business Unit to include PM, Superintendent, and all safety staff.
- Ensure that all safety staffing requirements are followed.

Business Unit Environmental, Health, and Safety Director

- Walk the jobsite before construction begins and understand the history of the site to identify potential environmental hazards.
- Ensure receipt of a comprehensive Phase I (and Phase II if appropriate) Environmental Site Assessment and pre-demolition survey prior to signing the contract.
- Establish and implement a site-specific safety program for the Business Unit.
- Establish and implement emergency evacuation and crisis management programs for the Business Unit and project sites, and monitor project site programs.
- Monitor overall construction safety performance through project management, SPD managers and staff.
- Ensure procedures are established and maintained to provide a safe work site, and written reports are completed in a timely manner.



- Monitor and inspect each project monthly using the SafetyNet system. (See Section 2, SafetyNet Operational Guideline)
- Ensure that corrective actions have been implemented for all hazards noted by insurance carriers, Turner staff, local, state and federal agencies or others.
- Attend senior staff meetings to report on/review safety and environmental issues.
- Attend progress meetings or safety meetings as requested or deemed necessary.
- Review accident, safety and environmental reports, investigate all serious/fatal and/or catastrophic accidents, notify appropriate parties, and maintain permanent file.
- Establish and make available safety and environmental training.
- Maintain safety and environmental reference materials.
- Provide projects with necessary reporting forms and posters.
- Establish and maintain liaison with insurance carriers for loss prevention and claims service.
- Establish and maintain liaison with appropriate local, state or federal agencies.
- Implement Turner Risk Management initiatives per Safety Action Planning each year.
- Coordinate all responses to mold or moisture intrusion events.
- Read all contracts for scopes of work as they pertain to safety and loss control. The BUEHSD should review all safety additional provisions. In addition, the BUEHSD must read and approve all SAR's.

Chief Estimator

- Ensure an adequate safety budget, including cost for Business Unit Environmental, Health, and Safety Director and specific line items for safety management depending on project exposures.
- Verify the owner has included an environmental survey in project documents, and obtain copies of all pertinent reports, documents, etc.
- Discuss and review site specific safety requirements with the Project Management and Turner's Safety Director.
- Coordinate with the Procurement Department and the Business Unit Environmental, Health, and Safety Director on the scope of safety requirements and how they will be purchased.

Procurement Manager

- Before a quote is accepted from a subcontractor, ensure that the sub has submitted their current safety qualification information and have an EMR of 1.0 or less. If greater than 1.0, evaluate risks associated with each contractor and include money and resources to manage that risk.
- Ensure that the subcontractors meet with the Business Unit Environmental, Health, and Safety Director, who must approve the subcontractor's safety program before start of work.
- Ensure that Turner Construction receives proof that all sub tier EMR's do not exceed 1.0.
- Ensure subcontractors have all the appropriate insurance (including Workmen's Compensation for rented labor or piece workers), by obtaining certificates of insurance. Also, implement a program to manage the expiration dates with ample time to receive current certificates without impacting project performance.
- Ensure all appropriate Exhibits are included in the contract, i.e. specific project hazards, drug and alcohol testing, and mitigation measures.
- Ensure the on-site safety program is included in the subcontractors' bid and contract documents.
- Implement a proactive subcontractor evaluation program with safety performance being one of the primary evaluation criteria.
- Coordinate with the Estimating Department and the Business Unit Environmental, Health, and Safety Director on the scope of safety requirements and how they will be purchased.
- Coordinate all scopes of work that pertain to safety and loss control with the BUEHSD.

Project Executive/ Project Manager

- Work with the pre-construction team to ensure an adequate safety budget is estimated.



- During project set-up, evaluate specific project exposures and risks. Implement safety-preplanning programs to properly mitigate risks during subcontract buy-out. Involve insurance companies and Business Unit Environmental, Health, and Safety Director in project preplanning activities.
- Conduct pre-construction staff meetings establishing goals and responsibilities, in addition to reemphasizing Turner's mission to be the leader in construction safety.
- Include field staff early on in projects to review for safety concerns during the preplanning phase.
- Ensure a member of the project Sr. Management Team (Project Manager or higher) conducts a monthly safety inspection and makes a written report to the Business Unit Environmental, Health, and Safety Director.
- Work with the Business Development Department to ensure that a Phase I Environmental Study is conducted on all potential new work.
- Ensure project staff is completing required safety responsibilities throughout the duration of the project.
- Participate in safety related training programs. Keep current on all new legislative policies for OSHA and new Turner policies and requirements.
- Lead by example.

Business Development Manager

- Notify Business Unit Environmental, Health, and Safety Director of potential project pursuits.
- Walk the jobsite before construction begins and understand the history of the site to identify potential environmental hazards.
- Ensure the Owner provides a comprehensive Phase I (and Phase II if appropriate) Environmental Site Assessment and pre-demolition survey prior to signing the contract.
- Proactively market the need for an effective safety program and adequate budget in selling new work. Help the client to understand that safety pays in cost, time, and quality of construction.
- Inform Owner of Turner's Environmental Policies.
- Add Business Unit Environmental, Health, and Safety Director to the distribution list of both one (1) and 1-A meetings.

Project Superintendent

- Responsible for taking leadership role on their project and for implementing Turner's safety policies and procedures.
- Review subcontractors' competent person qualifications (resume) and discuss with BUEHSD to assure subcontractor is properly staffing project.
- Supervise, manage and require compliance to the site specific safety program by all personnel working on the project.
- Conduct pre-construction safety meetings with all subcontractors prior to their start of work.
- Conduct preplanning safety meetings prior to the start of new phases of construction.
- Participate in the development of the Site Specific Project Safety Program, Fire Prevention and Protection Program, Crisis Management Program, and additional safety programs as required.
- Create a Site Logistics Plan for the project.
- Set up the project trailer/office to be compliant with federal, state and local regulations.
- Provide the project trailer/office with a first aid kit, fire extinguishers, exit signs, and an evacuation route.
- Ensure all Turner and Subcontractor's staff completes project safety orientation prior to beginning work.
- Conduct and document a weekly safety inspection using SafetyNet.
- Ensure compliance with Turner pre-task planning (PTP) requirements.
- Assume overall responsibility for job site safety. If needed, appoint a qualified individual to be the safety coordinator.
- Conduct monthly project safety meetings and weekly coordination meetings with safety as the first topic of discussion. Subjects for discussion should cover but not be limited to:



- Superintendents' observations regarding safety.
 - Reports of the Project Safety Manager and actions taken on any recommendations
 - Accidents which have occurred during the past month and methods of eliminating or protecting against them.
 - Conditions and/or actions that may affect the public and methods for correcting them.
 - Identify critical safety work activities.
 - Issue safety information to job staff, foremen and subcontractors once a month concerning safety subjects pertinent to the job.
- Require that each Turner and Subcontractor's foreman hold a Tool Box Safety Meeting with their crew at least once each week to discuss the following:
 - Minutes of staff safety meeting as they affect the work.
 - Instruct the employees in safe and efficient planning of their work.
 - The safety subject assigned at the staff safety meeting; safety subjects shall be pertinent to the current work activity.
 - Injuries or near misses that have occurred to their employees.
 - Solicit comments and suggestions relating to safety.
 - Minutes shall include dates and signatures.
 - Require all subcontractors to provide their employees with the proper safety equipment required by the site specific safety program, and federal, state and local requirements.
 - Require all subcontractors with non-English speaking employees to have a translator on site any time workers are present.

Project Safety Manager

- Perform a minimum of three safety inspection of the project each week using SafetyNet.
- Ensure that all recommendations noted are corrected immediately, and noted in a timely fashion using SafetyNet.
- Review and comment on pre-task plans completed by Turner and subcontractors.
- Distribute and post safety information.
- Maintain First Aid equipment – ensure the First Aid Kit is inspected weekly.
- Monitor the Site Specific Safety Program.
- Assist in the investigation of all accidents, including those of Subcontractors. Submit a written report, within Risk Console and notify the Business Unit Environmental, Health, and Safety Director.
- Keep current on all new legislative policies for OSHA and new Turner policies and requirements.
- Establish a relationship with all relevant regulatory agencies that might inspect Turner projects, Escort compliance officers on walk, follow Turner policies and file required reports to the BUEHSD.

Safety Training and Education Policy

I. Policy Statement

Turner believes a key component in driving an injury free environment is to develop and maintain a well-trained work force that understands basic safety and health principles. The following are minimal requirements that must be met by all Turner employees.

II. Procedure

1. Required Course Work:

- a) **New Employee Orientation – On Day One**, the employee's supervisor shall provide critical safety and health training for all new or re-hired employees. Information provided shall include:
 - i. Hazards associated with their job and proper ways to perform the task safely.
 - ii. Chemical Management & Hazard Communication Program.
 - iii. Emergency Response Procedures.
 - iv. PPE Requirements
- b) The Supervisor shall schedule a meeting with the Business Unit Environmental, Health, and Safety Director to discuss the following key topics: Turner Construction Safety Policies, Developing an Injury Free Culture, and Turner Strategic Safety Objectives.
- c) OSHA 30 - All Turner employees in safety sensitive positions are required to have a 30 hour card. It is preferred that Turner's web-based course is utilized to fulfill these requirements. Individuals who already have a 30 hour card must take the Turner Web based Safety Refresher (2-Year Safety Refresher) course within the first six months of placement.
 - The Turner CN and Safety family, due to their interface with subcontractors and clients, is required to take the refresher course, as appropriate, every two years: Logistics, Estimating, Procurement, and Business Development. Also, all new CN family recruits should receive OSHA 30 training regardless of their initial assignment and this training should be completed within the first 90 days of start date. Close coordination with HR for tracking of required training of each person.
 - The following Turner families are exempt for the OSHA 30 Hour and refresher courses: Cost/accounting, BIM/VDC, Scheduling, Human Resources, Community Affairs, and Administrative. If any of the above staff are assigned to a project and are working from the project site, then they need to follow the policy requirement with respect to the OSHA 30 and Refresher.
- d) Subcontractor Substance Abuse Testing & Reasonable Suspicion Training - All Turner employees that interact with subcontractor workforce are required to attend training and adhere to the corporate policy regarding prescreening, random, post incident, and reasonable suspicion drug abuse testing.
- e) First Aid/CPR – A minimum of one Turner employee shall be on site per project and office location with an active CPR/FA/BBP/AED certification.

- f) OSHA Specific Training - When needed, individuals will be required to attend specific training that will enable Turner to be fully compliant with all applicable regulations. Scaffolds, Traffic Safety, Fall Protection, Hoists/Cranes, are a few examples of specific traininigs.
- g) Subcontractor: All personnel assigned to the project are required to provide and/or attend:
 - i. Attend a jobsite specific Safety and Health Orientation/Videos and complete the Safety and Health Orientation form prior to beginning work on the job site. Participate in the Turner Continuous Safety Improvement Process known as "Building L.I.F.E. – Living Injury Free Everyday". This process has been established to inform all personnel of the historically significant uses of the property and of the existence of any known contaminants on the site. The information in this orientation is based on Turner Construction Company's current knowledge regarding the specific physical hazards, which were known to exist.
 - ii. Submit to Substance Abuse testing and other health related screening (i.e., tuberculosis testing) as required by contract.
 - iii. Attend a Weekly Mass Safety Meeting
 - iv. Conduct Weekly Toolbox Talks conducted by your employer
 - v. Recurrent training in regards to unsatisfactory safe work practices of an employee
 - vi. Safety meetings due to unsafe act and/or conditions as requested by Turner Construction Company
 - vii. Each employer on this Project is required to provide their employees adequate Safety and Health training for the specific work tasks to be performed by the employees.

TURNER RISK MANAGEMENT CORPORATE ENVIRONMENTAL, HEALTH AND SAFETY POLICY

Engineering & Technology



Concrete and Masonry

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart Q – Concrete and Masonry Construction, in addition to the following guidelines.

II. Procedures

1. General Requirements

- a) Unless otherwise stated in their contract, the concrete or masonry contractor must provide at least two covered entrances into each building or structure during perimeter work. They must also cordon off other means of access/egress.
- b) No load may be placed on a concrete structure unless a qualified person, knowledgeable in structural design, determines that the structure is capable of supporting the load.
- c) Protruding reinforced steel, onto which employees could fall or fall into, must be protected to eliminate the hazard of impalement. The use of mushroom caps is not permitted for impalement hazards.
- d) Subcontractors must submit a formal Fall Prevention Plan to Turner, including the name and qualifications of their designated competent person.
- e) No worker, except those involved in post tensioning operations, shall be permitted to be behind the jack during tensioning operations. Signs and barricades shall be erected to limit access to the area.
- f) No worker shall be permitted to walk under concrete buckets while it is being elevated or lowered into position.
- g) No worker shall be permitted to apply cement, sand and water mixture through a pneumatic hose unless the employee is wearing the proper PPE including face protection.
- h) This subcontractor shall provide an eye wash station with at least 15 minutes of eye wash solution within 75 feet of any concrete, painting or masonry work.

2. Equipment and Tool Requirements

- a) Powered and rotating concrete troweling machines must have a switch that automatically shuts off power whenever the hands of the operator are removed from the machine.
- b) Masonry saws must be provided with a semi-circular guard (180 degrees of protection).
- c) Machines must be locked and tagged out of service, per Section K, before employees can perform any maintenance or repair work.



3. Cast-In-Place Concrete Requirements

- a) Formwork must be designed, fabricated, erected, supported, braced and maintained so it is capable of supporting all lateral and vertical loads anticipated to be applied to it.
- b) All shoring equipment must be inspected prior to erection to determine if it meets the requirements specified in the formwork drawings.
- c) Erected shoring equipment must be inspected immediately prior to, during and after concrete placement.
- d) A qualified designer must prepare the design of the shoring and an engineer qualified in structural design must inspect the erected shoring.
- e) Forms and shores must not be removed until the employer determines that the concrete has gained sufficient strength.
- f) 100% fall prevention/protection must be maintained anytime a worker is exposed to falls greater than 6'.
- g) At building perimeters where the decking steps down to allow for a beam pour, the height of the rails shall be increased accordingly.
- h) Areas where form stripping is to be performed must be properly barricaded with tape or fence and signage must be posted on all sides. This should include areas below stripping.
- i) Protruding nails should be removed or bent immediately.
- j) Where employees must walk across rebar, temporary walkways must be installed to prevent trip hazards.
- k) Outrigger platforms used for material movement in and out of the building via a crane or forklift must be designed by an engineer and incorporate 100% fall protection systems.

4. Masonry Requirements

- a) A limited access zone must be established prior to the start of any masonry work.
- b) The zone must be equal to the height of the wall, plus four feet for the entire length of the wall.
- c) All masonry walls over 8 feet in height shall be adequately braced and remain in place until the permanent supporting elements of the structure are in place.
- d) Employees that are working at heights greater than 6 feet must be protected from falling by guardrail systems, safety net systems or personal fall arrest systems.
- e) For overhand bricklaying from a scaffold, fall protection is required if the working side of the scaffold has a gap greater than 12" between the scaffold and structure.



- f) The specific fall prevention/protection method shall be documented in the JHA/PTP.



Confined Spaces in Construction

I. Policy Statement

This program has been developed to comply, at a minimum, with 29 CFR 1926 Subpart AA Permit-Required Confined Spaces. This program sets forth requirements for practices and procedures to protect employees engaged in construction activities at a worksite with one or more confined spaces. Entering or knowledge of entry into a confined space without all appropriate planning and permits is a zero tolerance issue for Turner Construction and will be dealt with appropriately.

As a reminder you may be required to also follow the 29 CFR 1910.146 General Industry Confined Spaces Program, but the more stringent of the two will always apply.

II. Definitions

1. Confined space means a space that:
 - a) Is large enough and so configured that an employee can bodily enter it;
 - b) Has limited or restricted means for entry and exit (definition below); and
 - c) Is not designed for *continuous employee occupancy*.

Confined spaces may include, but are not limited to, the following: Bins; boilers; pits (such as elevator, escalator, pump, valve or other equipment); manholes (such as sewer, storm drain, electrical, communication, or other utility); tanks (such as fuel, chemical, water, or other liquid, solid or gas); incinerators; scrubbers; concrete pier columns; sewers; transformer vaults; heating, ventilation, and air-conditioning (HVAC) ducts; storm drains; water mains; precast concrete and other pre-formed manhole units; drilled shafts; enclosed beams; attics; interstitial spaces; vessels; digesters; lift stations; cesspools; silos; air receivers; sludge gates; air preheaters; step up transformers; turbines; chillers; bag houses; and/or mixers/reactors.

2. *Permit-required confined space* (permit space) means a confined space that has one or more of the following characteristics: (a) Contains or has a potential to contain a hazardous atmosphere; (b) Contains a material that has the potential for engulfing an entrant; (c) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or (d) Contains any other recognized serious safety or health hazard.
3. *Non-permit required confined space* means a confined space that meets the definition of a confined space but does not meet the requirements for a permit-required confined space, as defined in this subpart.
4. Limited or restricted means for entry or exit means a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.
5. Controlling Contractor: is the employer that has overall responsibility for construction at the worksite.
6. Attendant means an individual stationed outside one or more permit spaces who assesses the status of authorized entrants and who must perform the duties specified in §1926.1209. Note: the attendant must have knowledge of existing and potential hazards, including signs/symptoms of exposure. Must

maintain accurate head count/communication with entrants, is aware of possible behavioral effects of hazard exposure in authorized attendants, and assesses activities and conditions inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately as required by the standard.

7. Authorized entrant: means an employee who is authorized by the entry supervisor to enter a permit space and must perform the duties found in section VIII.
8. Entry Supervisor means the qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this standard.

III. General Requirements

Before beginning work at a project site, each contractor must ensure that a competent person identifies all confined spaces in which one or more of the employees it directs may work, and identifies each space through consideration and evaluation of the elements of that space, including continuous testing as necessary. All confined spaces that an employee will enter must be classified as either a "permit-required space," a "non-permit space," or an "alternate-entry space." Classification of each type of space must be accomplished using the Turner Confined Space Entry Permit, regardless of classification. If the workplace contains one or more permit-required spaces, the employer who identifies, or who receives notice of, a permit space must:

1. Inform exposed employees of the existence and location of danger posed at each permit space by posting danger signs or any other equally effective means. Post signs in English plus any additional languages spoken by non-English speaking workers.



2. Inform, in a timely manner and in a manner other than posting, its employees' authorized representatives and the controlling contractor of the existence and location of, and the danger posed by, each permit space.
3. Each employer who identifies, or receives notice of, a permit space and has not authorized employees it directs to work in that space must take effective measures to prevent those employees from entering that permit space.
4. If any employer decides that employees it directs will enter a permit space, that employer must have a **written permit confined space program** implemented at the construction site. The written



program must be made available prior to and during entry operations for inspection by employees and their authorized representatives.

5. If there is a potential for an atmospheric hazard, then the contractor desiring to perform entry must monitor the atmosphere in the confined space prior to breaking the plane of the entry portal. If you are unsure if monitoring must be done, contact the BU Environmental, Health, and Safety Director. Some examples of situations where an atmospheric hazard might exist would include, but not be limited to, the use of fossil-fuel powered engines and tools in the area; chemicals or paints being used in the area, compressed gases stored or used in the area, etc.

Alternate Entry Procedure

An employer whose employees enter a permit space need not comply with 1926.1204 through 1206 and 1926.1208 through 1211, provided that all of the following conditions are met:

The employer can demonstrate that all physical hazards in the space are eliminated or isolated through engineering controls so that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;

The employer can demonstrate that continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry, and that, in the event the ventilation system stops working, entrants can exit the space safely;

The employer develops monitoring and inspection data that supports the demonstrations required by paragraphs (e)(1)(i) and (ii) of this section;

If an initial entry of the permit space is necessary to obtain the data required by this paragraph the entry is performed in compliance with §§ 1926.1204 through 1926.1211;

The determinations and supporting data required by paragraphs (e)(1)(i), (ii), and (iii) of this section are documented by the employer and are made available to each employee who enters the permit space under the terms of paragraph (e) of this section or to that employee's authorized representative; and

Entry into the permit space under the terms of paragraph (e)(1) of this section is performed in accordance with the requirements of the following section:

The following requirements apply to entry into permit required spaces that meet the Alternate Entry Requirements above:

- Any conditions making it unsafe to remove an entrance cover must be eliminated before the cover is removed.
- When entrance covers are removed, the opening must be immediately guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space.



- Before an employee enters the space, the internal atmosphere must be tested, with a calibrated (annual-factory calibration and daily site calibration) direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Any employee who enters the space, or that employee's authorized representative, must be provided an opportunity to observe the pre-entry testing. Only a competent and qualified person may use the air monitor. Submit air monitoring results and calibration records to Turner upon request.
- No hazardous atmosphere is permitted within the space whenever any employee is inside the space.
- Continuous forced air ventilation must be used, as follows:
 - An employee must not enter the space until the forced air ventilation has eliminated any hazardous atmosphere;
 - The forced air ventilation must be so directed as to ventilate the immediate areas where an employee is or will be present within the space and must continue until all employees have left the space;
 - The air supply for the forced air ventilation must be from a clean source and must not increase the hazards in the space
- The atmosphere within the space must be continuously monitored unless the entry employer can demonstrate that equipment for continuous monitoring is not commercially available or periodic monitoring is sufficient... If continuous monitoring is used, the employer must ensure that the monitoring equipment has an alarm that will notify all entrants if a specified atmospheric threshold is achieved, or that an employee will check the monitor with sufficient frequency to ensure that entrants have adequate time to escape. If continuous monitoring is not used, periodic monitoring is required. All monitoring must ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Any employee who enters the space, or that employee's authorized representative, must be provided with an opportunity to observe the testing.
- If a hazard is detected during entry:
 - Each employee must leave the space immediately.
 - The space must be evaluated to determine how the hazard developed.
 - The employer must implement measures to protect employees from the hazard before any subsequent entry takes place.
- The employer must ensure a safe method of entering and exiting the space. If a hoisting system is used, it must be designed and manufactured for personnel hoisting; however, a job-made hoisting system is permissible if it is approved for personnel hoisting by a registered professional engineer, in writing, prior to use.
- The employer must verify that the space is safe for entry and that the pre-entry measures have been taken through a written certification that contains the date, location of the space and signature of persons providing the certification. The certification must be made before entry and must be made available to each employee entering the space or to that employee's authorized representative. A copy must be provided to Turner Construction before entry begins.

Reclassifying a Permit Space to a Non-Permit Confined Spaces



A space classified by an employer as a permit-required confined space may only be reclassified as a non-permit confined space when a competent person determines that all of the applicable requirements in paragraphs of this section have been met:

- If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated or isolated without entry into the space (unless the employer can demonstrate that doing so without entry is infeasible), the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated or isolated;
- The entry employer must eliminate or isolate the hazards without entering the space, unless it can demonstrate that this is infeasible. If it is necessary to enter the permit space to eliminate or isolate hazards, such entry must be performed under §§ 1926.1204 through 1926.1211. If testing and inspection during that entry demonstrate that the hazards within the permit space have been eliminated or isolated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated or isolated;
 - Note: Control of atmospheric hazards through forced air ventilation does not constitute elimination or isolation of the hazards. Paragraph (e) of this section covers permit space entry where the employer can demonstrate that forced air ventilation alone will control all hazards in the space.
- The entry employer must document the basis for determining that all hazards in a permit space have been eliminated or isolated, through a certification that contains the date, the location of the space, and the signature of the person making the determination. The certification must be made available to each employee entering the space or to that employee's authorized representative;
- If hazards arise within a permit space that has been reclassified as a non-permit space under paragraph (g) of this section, each employee in the space must exit the space. The entry employer must then reevaluate the space and reclassify it as a permit space as appropriate in accordance with all other applicable provisions of this standard.

IV. Permit Space Entry Communication and Coordination

Before entry operations begin, the controlling contractor must obtain the host employer's information about the permit space hazards and previous entry operations and provide the following information to each entity entering a permit space and any other entity at the worksite whose activities could foreseeably result in a hazard in the permit space:

- a. The information received from the host employer;
- b. Any additional information the controlling contractor has about the space.
- c. The precautions that the host employer, controlling contractor, or other entry employers implemented for the protection of employees in the permit spaces.

A boilerplate letter is attached to this program to send to host employers to obtain the necessary information.

The controlling contractor and entry employer(s) must coordinate entry operations when:



- a. More than one entity performs permit space entry at the same time; or
- b. Permit space entry is performed at the same time that any activities that could foreseeably result in a hazard in the permit space are performed.

After entry operations:

The controlling contractor must debrief each entity that entered a permit space regarding the permit space program followed and any hazards confronted or created in the permit space(s) during entry operations. This debrief needs to happen with the crew performing the entry immediately, or as soon as possible after entry. Document this meeting on the cancelled permit and submit the permit to the BU Environmental, Health, and Safety Director.

The entry employer must inform the controlling contractor in a timely manner of the permit space program followed and of any hazards confronted or created in the permit space(s) during entry operations; and the controlling contractor must apprise the host employer of the information exchanged with the entry entities pursuant to this subparagraph. Submit copies of each cancelled permit and any lessons-learned to the Host Employer. Document this was done on the cancelled permit that goes to the BUEHSD.

Unless the controlling contractor has or will have employees in a confined space, it is not required to enter any confined space to collect the information.

V. Permit Required Confined Spaces

1. Permit Required Spaces – If permit spaces are identified, the following program elements must be addressed by the entry contractor's competent person in a **Written Project Specific Confined Space Procedure**. This procedure must be submitted in advance to the Turner project manager.
 - a) Job Specific Safety Analysis – Include a review of site specific hazards and details on how to control these hazards such as; ventilation, protective clothing, respiratory equipment, air testing and monitoring, fire prevention, training, rescue plan, documentation and access.
 - b) Atmospheric Testing – Specify how the space will be tested for oxygen content, combustible gases and vapors, toxic gases and vapors to ensure that acceptable entry conditions exist. Permit Confined spaces will be continuously monitored while entrants are in the confined space.
 - c) Assigned Duties – Provide training for all personnel entering a confined space, attendants and entry supervisors on their duties, the nature of existing and potential hazards in and around the space, precautions to avoid any incidents and the use of personal protective equipment and emergency rescue equipment.



- d) Unauthorized Entry – Procedures they will implement that are necessary to prevent unauthorized entry
- e) Rescue Equipment and Emergency Services
 - 1. A rescue procedure shall be developed by the subcontractor responsible to enter the space and submitted to Turner prior to commencing a confined space entry. If subcontractor decides to use a rescue service vendor that service must be on site at the beginning of and during the permit space work. Fire and emergency rescue services are not a substitute for a qualified and trained rescue team or vendor service. At a minimum 29 CFR Appendix F to Subpart AA Rescue Team and Rescue Service Evaluation Criteria must be utilized when assessing rescue operations.
 - 2. A pre-planned rescue procedure shall be developed for the attendant who is stationed outside the space to observe and communicate with the entrant(s). The procedure should discuss how to:
 - a. summon the on-site rescue and emergency services
 - b. procedures for rescuing entrants from permit spaces
 - c. provide necessary emergency services to rescued employees
 - d. and prevent unauthorized personnel from attempting a rescue.
 - 3. All persons entering a permit-required confined space shall wear a full-body harness with retrieval system attached. Wristlets may be used in lieu of the chest or full body harness if it can be demonstrated the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.
 - 4. All retrieval and rescue equipment to meet applicable ANSI or OSHA requirements and be designed for intended operations.
 - 5. A trained attendant with a pre-planned rescue procedure shall be stationed outside to observe (if possible) and/or communicate with the entrant at all times and be capable of putting rescue operations into effect. At a minimum 29 CFR Appendix F to Subpart AA Rescue Team and Rescue Service Evaluation Criteria must be utilized when assessing rescue operations. If a subcontractor decides to use a rescue service vendor, that service must be on-site during the full duration of the permit space work. Fire and emergency rescue services are not a substitute for a qualified and trained rescue team or vendor service, on-site.
- f) An **Entry Permit** must be used to record critical data and serve as official Final entry authorization to enter the permit required space and must be implemented prior to entering the space. Develop and implement the means, procedures, and practices necessary for safe permit space entry operations. Identify and evaluate the hazards of permit spaces before employees enter them.



- g) Training – documentation of employees expected to enter permit spaces must be provided and reviewed by the Project Superintendent and Project Safety Manager (if assigned) to ensure that they have been trained per the requirements of 29 CFR 1926.1207. Training documentation must be verified for all rescue personnel or rescue service that will be used. Training should also include respirators where they might be used for rescue.
- h) If respiratory protection is required, the subcontractor responsible to make entry into the space will submit their Respiratory Protection Plan to Turner Construction for review. The plan shall include identified hazards associated with the space and their concentrations, what respiratory protection is needed, medical screening/fit testing, signs and symptoms of exposure, what are the cartridge/canister change-out procedures, respiratory training, etc.

Note: any contractor that will self-perform rescue into a confined space that could potentially have a hazardous atmosphere must have the appropriate level of respiratory protection on hand for the number of rescuers assigned. Potentially IDLH atmospheres will necessitate either SCBAs or SARs be provided.

- 2. Atmospheric Air Monitoring shall occur before entering a confined space. Continuous monitoring, using a four gas meter, is required. Testing the Atmosphere in the confined space is required by a qualified Entry Supervisor prior to entry. Take samples at all accessible areas of the confined space. The qualified person must note the results of the sampling. The atmosphere must meet the following conditions:
 - a) Oxygen: 19.5 percent minimum, 23.5 percent maximum,
 - b) Flammable gases and vapors: less than 10 percent,
 - c) Toxic gases: persons monitoring the atmosphere of permit spaces will adhere to the lowest published exposure limit among OSHA, NIOSH and ACGIH to determine when evacuation from a permit space is necessary. Alarm settings on instruments must never exceed these limits. Additionally, when any toxic gas or vapor reading is above background, but below published exposure limits, the entry supervisor will evaluate.
 - d) IF the above atmospheric conditions are not attainable, the area is a Permit Required Confined Space. A plan must be developed and the permit submitted to Turner Construction for review and comments.
 - e) If the work performed inside the space could generate flammable vapors or produce an oxygen-deficient atmosphere, this space is a Permit Required Confined Space and continuous air monitor is required by the construction standard. Non-sparking tools and intrinsically safe tools and equipment such as lights, radios, and monitors may be necessary when flammability is an issue.
 - f) Maintain a log of all readings.



3. Welding and Burning: Prior to any spark and/or heat producing activities in a confined space, the subcontractor must obtain a Hot Work Permit and determine there is no danger of flammable atmosphere.
4. Burning / Welding Procedures: When burning or welding inside a confined space, all cylinders and welding machines shall be located outside the confined space. Check hose connections or welding leads prior to entry. Remove all hoses from the confined space at the end of the work shift.
5. All potential confined spaces, both existing and new, shall be marked, labeled or appropriately identified. The controlling contractor, rather than the host employer, is the primary point of contact for information about permit spaces at the worksite. The host employer must provide information it has about permit spaces at the work site to the controlling contractor, who then passes it on to the employers whose employees will enter the spaces (entry employers). In addition, entry employers must give the controlling contractor information about their entry program and hazards or improvement opportunities they encounter in the space. The controlling contractor will provide the new information on to other entry employers and back to the host. The controlling contractor will make sure employers outside a space know not to create hazards in the space, and that entry employers in a space at the same time do not create hazards for one another's workers.

VI. Permitting Process

All confined space entries requiring a permit will utilize the Turner Confined Space Entry Permit. Before the entry begins, the Entry Supervisor identified on the permit must sign the entry permit to authorize entry. The completed permit must be made available at the time of entry.

The Entry Supervisor must terminate entry and take the following action when:

- Cancel the permit when the operations associated with the permit are complete.
- Suspend or cancel the permit and fully reassess the permit space before allowing reentry when a condition arises in or near the space that is not allowed under the entry permit.

The Entry Employer must retain each canceled entry permit for at least one year to facilitate the review of the permit-required confined space program. Any problems encountered during an entry operation must be noted on the permit so that the appropriate revisions to the permit space program can be made.

Entry Permit (See Forms Section for Confined Space Permit)

The entry permit document that authorizes entry into a permit space must:

- Identify the permit to be entered,
- Purpose of the entry,
- Date and authorized duration of the entry permit,
- Authorized entrants by name in the permit space,



- Identify the means of detecting an increase of atmospheric hazard levels,
- The person, by name, currently serving as the attendant,
- The individual, by name, currently serving as the Entry Supervisor and the signature or initials of each Entry Supervisor who authorizes entry,
- The hazards of the permit space to be entered,
- The measures used to isolate the permit space and to eliminate or control permit space hazards before entry,
- Identify the acceptable entry conditions,
- The results of tests with the names of the testers and the time the test was performed,
- Identify the rescue and emergency services to be contacted and the means of contacting those services (equipment to use and the numbers to call).
- Identify the communication procedures used by authorized entrants and attendants.
- Identify the PPE that will be utilized, the testing equipment, communication devices, alarm systems and the rescue equipment that will be provided.
- List any additional information necessary for the particular confined space to ensure employee safety.
- List any additional permits required, such as hot work permits, etc. that have been issued to authorize work in the permit space.
- Conduct a meeting with the appropriate parties, including owner, to review the written site-specific confined space plan and make necessary adjustments before activity begins.

VII. Training

The employer must provide training to each employee and ensure that the employee possesses the understanding, knowledge and the skills necessary for the safe performance of their assigned duties. The training must result in the understanding of the hazards in the permit space and the methods used to isolate, control or in other ways protect employees from the hazards, and for those employees not authorized to perform entry rescues, in the dangers of attempting rescues.

- The training must be in the language and vocabulary that the employee can understand.
- Training is required before the employee is first assigned duties, before there is a change in assigned duties or when there is a change in the permit space entry where an employee has not previously been trained.
- Training is required when there is evidence of a deviation from the permit space entry procedures or there are inadequacies in the employee's knowledge or use of the procedures.
- The employer must maintain training records that training was accomplished. The training records must contain the employee's name, the name of the trainers and the dates of training.

Supervisor's Training (Individual authorizing or in charge of entry):

- A. Entry Permit – content and completeness,
- B. Procedures, practices and equipment,
- C. Entry operations monitoring,



- D. Entry cancellation,
- E. Closing procedures after completion,
- F. Dealing with unauthorized personnel.

Entrants and Attendants Training:

- A. Hazard Recognition:
 - a. Type of Hazard,
 - b. Signs and symptoms,
 - c. Consequence of exposure.
- B. Communication
 - a. Maintain contact between entrant and attendant.
 - b. Entrant should notify the attendant prior to attempting self-evacuation.
 - c. Notification of entrants by attendant if:
 - o Behavioral changes are observed.
 - o Dangerous situations occur in or around the space.
 - o Condition exists that is not consistent with the permit.
 - o The attendant must leave the workstation.
- C. Protective Equipment:
 - a. Appropriate equipment- respirators, clothing, retrieval lines, etc.
 - b. Proper use of protective equipment
 - c. External protective barriers to prevent unauthorized entries
- D. Self- rescue:
 - a. When ordered by attendant to evacuate
 - b. If the entrant's monitor alarm sounds
 - c. If the entrant perceives danger
- E. Rescue:
 - a. Attendant will not enter the space to attempt save
 - b. Attendant should be trained in rescue procedures and the proper use of rescue equipment

Rescue Team Training:

- a. Hazard Recognition
- b. Proper use of protective equipment including respirator and rescue equipment
- c. Rescue Procedures
- d. Emergency first aid, CPR and AED
- e. Simulated rescue operation drills

VIII. Duties of Authorized Entrants

The entry employer must ensure that all authorized entrants:

- Are familiar with and understand the hazards that they may face during entry
- Properly use the equipment provided



- Communicate with the attendant as necessary on their status
- Alert the attendant if there is a warning sign or symptom of exposure to a dangerous situation or detects a prohibited condition
- Exit the space when an order to evacuate is given by the attendant or entry supervisor, there is a warning sign or symptom to a dangerous situation, the entrant detects a prohibited condition or an evacuation alarm is activated



IX. Duties of Attendants

The entry employer must ensure that each attendant:

- Is familiar with and understands the hazards that may be faced during entry
- Is aware of possible behavioral effects of hazard exposure of the entrants
- Continuously maintains an accurate count of entrants in the permit space
- Remains outside the permit space during entry until relieved by another attendant
- Communicates with entrants as necessary to access the status of the entrant and to alert entrants of the need to evacuate the space
- Assesses activities and conditions inside and outside the space to determine if it is safe for the entrants to remain in the space. Orders entrants to evacuate the space if there is a prohibited condition, if there are behavioral effects of an apparent hazard exposure, if there is a situation outside the space that could endanger the entrant or if the attendant cannot effectively or safely perform all the duties required.
- Summon rescue or other emergency services if the entrants need assistance
- Warns all unauthorized persons that they must stay away from the permit space
- Advises the unauthorized persons that they must exit immediately if they entered the permit space
- Informs the authorized entrants and the entry supervisor if unauthorized person have entered the permit space
- Performs no duties that might interfere with the attendants primary duty to access and protect the authorized entrants

X. Duties of the Entry Supervisor

The entry employer must ensure that each entry supervisor:

- Is familiar with and understands the hazards that may be faced during entry
- Verifies by checking that all the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing the entry to begin
- Terminates the entry and cancels or suspends the permit as required by 1926.1205 (e)
- Verifies the rescue services are available and the means of contacting them are operable and the employer will be notified as soon as the services are unavailable
- Removes unauthorized individuals who enter or attempt to enter the permit space

XI. Rescue and Emergency Services

- Rescuers must be on-site during the entry.
- If an employer brings in a third party to perform rescue services, the employer shall evaluate the prospective rescuer service's ability, in terms of proficiency with rescue related tasks and equipment, to function properly while rescuing entrants.
- The rescue team or service must be stationed close by the space, on the project, in order to reach the victim promptly and is equipped for and proficient in performing rescue services.



- The employer shall inform each rescue team or service of the hazards that they may confront when called upon to perform a rescue at the site.
- Provide the rescue team or service selected with access to all permit spaces so they can develop an appropriate rescue plan and to practice rescue operations.
- The employer shall train affected employee to perform assigned rescue duties and ensure that such employees successfully complete the training required and establish proficiency as authorized entrants.
- Train each affected employee in the basic first aid/CPR and ensure one member of the rescue team or service has a current first aid/CPR certification available.
- The employer shall ensure that affected employees practice making permit space rescues before attempting an actual rescue at least once every 12 months. This can be done by a simulated rescue operation in which they remove dummies, etc. from an actual permit space.
- Planning and providing for non-entry rescue is required unless the retrieval equipment would increase the overall risk or not contribute to the rescue of the entrant. The employer must still have an on-site rescue team. Each authorized entrant must wear a full body harness with the retrieval line attached to the back. The other end of the retrieval device must be attached to a mechanical device or a fixed point outside the permit space in a manner that a rescue can begin when necessary. Equipment that is unsuitable for retrieval must not be used. The SDS's must be made available to the treating medical facility where the worker is being treated.

XII. Annual Program Review

Each business unit will review cancelled permits and incident reports involving confined spaces from each project's confined space entries to assess the effectiveness of this program, lessons-learned and make appropriate changes to this program if necessary. This review must happen annually.



Sample Letter to “Host Employer” regarding confined space information:

Turner Construction Company
[Office Street Address]
[City, State, ZIP]

[Date]

[Recipient Name]
[Recipient Address]
[Recipient City, State, Zip Code]

Dear [Recipient Name]:

I’m writing as a courtesy to make sure you’re aware of the new OSHA regulations regarding Confined Spaces in Construction – Subpart AA, and how it may now create obligations for your organization. While the majority of the standard applies directly to the contractors that will perform confined space entry on your site, there are brand new requirements that apply to you, the “host employer.” OSHA defines host employer as “the employer that *owns or manages the property* where the construction work is taking place.” As required by Subpart AA, the host employer must now provide the “controlling contractor,” Turner Construction, with the following information, if it has it:

- The location of each known *permit-required confined space*;
- The hazards or potential hazards in each space or the reason it is a permit space; and
- Any precautions that the host employer, any previous controlling contractor or entry employer implemented for the protection of employees in the permit space.

OSHA defines a Permit-required confined space (permit space) as a confined space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
4. Contains any other recognized serious safety or health hazard.

If you have any of the information requested above, please forward to me at your earliest convenience and we will, in turn, provide the information to any subcontractors that will be performing confined space entry. Thanks for your assistance in this matter.

Sincerely,

[Your Name]

[Title]



Cranes and Derricks in Construction

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart CC – Cranes and Derricks in Construction, in addition to the following guidelines.

II. Procedures

- 1) General Requirements
 - a) No crane shall be placed in service on a Turner project until an annual, third party inspection and supplemental reports are submitted to Turner indicating that the crane meets the manufacturer's inspection criteria.
 - b) A daily crane inspection, performed by the competent person, is to be documented and those reports are to be given to Turner when requested.
 - c) Any crane that is altered, repaired, "jumped", or modified in a similar manner onsite must be re-inspected by an independent third party inspection company. Any crane after assembly must be inspected by an independent third party inspection company.
 - d) If the manufacturer's inspection criterion does not exist, a qualified person, familiar with crane design and dynamics, may develop inspection criteria.
 - e) Turner requires that all crane operators be certified by an accredited testing organization. Currently there are four organizations offering crane operator certifications. The four are the National Commission for the Certification of Crane Operators (NCCCO); the Crane Institute of America Certification (CIC); the Operating Engineers Certification Program (OECF); and the National Center for Construction Education and Research (NCCER). Copies of their certifications must be submitted to Turner. In addition, a resume indicating the specific type of crane must be submitted to TCCO supervision prior to operation. Additional certifications for operators by other accredited testing organizations must be vetted by Turner BUEHSD before acceptance.
 - f) Any lift exceeding 75% of the cranes rated capacity or lifts involving two or more cranes shall be considered a critical lift. In addition, the following factors should be considered when determining whether or not a critical lift plan should be developed:
 - Potential hazards to personnel and the public
 - Hazards in proximity to the work area (i.e. power lines)
 - Complexity of the load (i.e. shifting loads)
 - Adverse impact from environmental conditions (i.e. winds)
 - Adverse commercial impact (i.e. job shutdown and cost to replace)
 - Site requirements / owner requirements

A critical lift plan must be submitted to TCCO supervision for review prior to the lift. A sample plan and checklist has been linked to this document.



- g) A pre-planning meeting to discuss the critical lift will be held in the field with the appropriate parties to discuss the lift. At a minimum, the following shall be reviewed:
 - The critical lift plan.
 - The contingency plan if something goes wrong during the lift.
 - The emergency response.
- h) Mobile crane movement on site must be in accordance with manufacturer's recommendations.
- i) At 20 mph, crane operations need to be evaluated by the competent person regarding the safe operation of the crane & the task associated with the crane. The crane shall not operate outside its wind limitations as stated in the operator's manual.
- j) The swing radius of cranes must be properly barricaded at all times while working on site. Tape is not an acceptable barrier.
- k) Outrigger pads should be at least 3 times the dimensions of the crane floats. The outrigger pads are to be pre-manufactured. The weight must be determined prior to lifting the load.
- l) Wire rope, its attachments, fittings, sheaves and safety devices must be inspected according to the manufacturer's recommendations. Copies of the inspections must be submitted to Turner.
- m) Wedge sockets and fittings must be the proper size to match the wire rope and must move to hold the wire rope under load. The dead end must be terminated according to ANSI B30.5.
- n) An anti two-block or warning device is required on all cranes as specified in ANSI B30.5 for each hoist line. This requirement may be waived by the BUEHSD for certain cycle duty crane operations such as pile driving and drilling rigs.
- o) A qualified rigger must inspect the rigging prior to each use.
- p) All windows in cabs must be safety glass that produces no visible distortion that will interfere with the safe operation of the machine.
- q) Cranes, hoists, boom trucks and derricks shall not be installed or operated within 20' of a power line unless they follow 1926.1408 (a) (2).
- r) Assembly/disassembly must be directed by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons ("A/D director"). See 1926.1404
- s) Before commencing assembly/disassembly operations, the A/D director must ensure that the crew members understand all of the following
 - 1. Their tasks,
 - 2. The hazards associated with their tasks.



3. The hazardous positions/locations that they need to avoid.

2) Ground Conditions

- a. Ensure that ground preparations necessary to meet the requirements. The equipment must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met. The requirement for the ground to be drained does not apply to marshes/wetlands. "Ground conditions" means the ability of the ground to support the equipment (including slope, compaction, and firmness).
- b. Inform the user of the equipment and the operator of the location of hazards beneath the equipment set-up area (such as voids, tanks, utilities) if those hazards are identified in documents (such as site drawings, as-built drawings, and soil analyses) that are in the possession of the controlling entity (whether at the site or off-site) or the hazards are otherwise known to that controlling entity.
- c. If the A/D director or the operator determines that ground conditions do not meet the requirements in paragraph (a) of this section, that person's employer must have a discussion with the controlling entity regarding the ground preparations that are needed so that, with the use of suitable supporting materials/devices (if necessary), the requirements in paragraph (a) of this section can be met.

3) Signal Person Qualifications

- a. Know and understand the type of signals used. If hand signals are used, the signal person must know and understand the Standard Method for hand signals.
- b. The employer must make the documentation for whichever option is used available (Third party qualified evaluator or Employer's qualified evaluator) at the site while the signal person is employed by the employer. The documentation must specify each type of signaling (e.g. hand signals, radio signals, etc.) for which the signal person meets the requirements
- c. Please refer to 1926.1428 for reference.



Crane Critical Lift Plan

1. This plan is to be followed if any of the following apply (check where applicable):

- A. Load capacity is equal to, or exceeds 75% of load chart rating _____
- B. 2 or more cranes will be used during lift _____
- C. Any unusual circumstances _____ Specify _____

2. Crane description: _____

3. Load Description: _____

4. Load Weight: _____

Specify how the weight was determined and by whom: _____

5. Description and weight of rigging and attachments:

A. Weight: _____

B. Description: _____

C. Weight determined by whom and how: _____

6. Total weight of Load/Rigging/Attachments/Load Chart Deductions: _____

7. Equipment:

A. Maximum operating radius: _____

B. Planned operating radius: _____

C. Allowable load from crane load chart: _____

D. Ratio of lift to allowable load (actual total load from line 5 divided by allowable load from chart): _____

8. Clearance:

A Clearance between boom and lift: _____

B Clearance to surrounding objects: _____

C Clearance for load movement sufficient: _____

9. Stability of Ground:

A Is the ground compact & stable: _____

B Are mats required: _____

C Outriggers in place and blocking used: _____

D Verify that the weight of the crane and units to be lifted are structurally supported by the public way: _____



10. Is a lift drawing required for this lift (if so, attach): _____

11. What type of communication will be used by operator and signal man:

12. What are wind and weather conditions: _____

A. If wind speed is over 25 mph, do not proceed with the lift: _____

B. If wind speed is over 20 mph, consider postponing: _____

13. How will area be kept clear of pedestrian traffic: _____

14. Comments:

Lift Approval:

Signature:

Date:

A. Crane Operator: _____

B. Crane Inspector: _____

C. Rigging Supervisor: _____

D. Lift Supervisor: _____

E. Signal Man: _____

F. Project Superintendent: _____



Critical Lift Checklist

Project Name: _____

Address: _____

Project No.: _____

Planning Data:

A. Trade Contractor: _____

1. Superintendent: _____

2. Lift Supervisor: _____

3. Crane Operator: _____

B. Description of Item to be lifted: _____

C. Major hoisting Equipment to be used:

1. Make and model of crane: _____

2. Serial Number: _____

3. Length of Boom: _____

B. Equipment and Lift relationship:

1. Operating Radius: _____

2. Boom length: _____

3. Allowable Load (from load chart): _____

4. Ratio of Lift to allowable load: _____

5. Clearance between Boom and Lift: _____

6. Clearance to surrounding facilities: _____

C. Schedule of Operations (include time for rigging and equipment inspection): _____

D. Basis for Critical Lift:

1. Load exceeds 75% of Load Chart for Crane or Derrick: _____

2. Load exceeds 50% of Load Chart and failure would endanger existing facilities: _____

3. Two Cranes are required: _____

4. Other: _____

E. How weight of Critical Lift was obtained:

1. Certified Scale Weight: _____

2. Calculated independently by more than one source:

a. Source: _____ Weight: _____

b. Source: _____ Weight: _____

3. If lift is an existing item (being removed or demolished), the weight is to be recalculated, taking into account all modifications including internal as well as an allowance for scale, sediment, sludge, insulation, liquid, etc.

a. Source: _____ Weight: _____

b. Source: _____ Weight: _____

Date: _____ **Signature** (Lift Supervisor): _____



Hoists and Elevators

1) Crane Suspended Personnel Platforms

- a) The use of a crane suspended personnel platform is prohibited on Turner projects unless the employer can demonstrate that conventional methods to do the work are more hazardous. The BUEHSD shall be notified of each request and must review and approve any deviations to this requirement.
- b) Specific crane operational criteria, listed in 29 CFR 1926, Subpart N, must be followed if it is determined that a suspended personnel platform will be used. The criteria includes, but is not limited to, the following:
 - Crane configuration requirements and inspections,
 - Additional crane instrumentation and/or components,
 - Specific platform design, construction and loading requirements,
 - Specific rigging and trial lift guidelines.

2) Material and Personnel Hoists

a) Material Hoists

- All entrances to hoists must be protected by substantial gates or bars, which guard the full width of the landing entrance.
- Operating rules must be posted at the operator's station along with the notice "No Riders Allowed".

b) Personnel Hoists

- Hoist way doors or gates shall be at least 6'6" high and shall have a mechanical lock, which cannot be operated from the landing side.
- All entrances to hoists must be protected by substantial gates or bars, which guard the full width of the landing entrance.
- Hoists shall be inspected on a weekly basis.
- All hoists shall be inspected and tested at not more than three-month intervals.
- All hoists shall have a "No Smoking" sign posted in the car and a fully charged fire extinguisher available for use.
- No hoist shall be placed into service on a Turner project until inspected and tested and the supplemental reports are submitted to Turner.



Demolition

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart T – Demolition, in addition to the following guidelines.

Prior to mobilizing, all projects must obtain a hazardous materials pre-demolition survey from the owner. This Survey must be prepared by a qualified third party environmental firm and shall identify all hazardous materials associated with the affected area.

II. Procedures

1. Preparatory Operations

- a) Prior to initiating demolition activities, an engineering survey of the building must be made by a competent person to determine the condition of the structure and identify areas subject to unplanned collapse. A copy of this inspection must remain on site.
- b) In select demolition, if the utilities cannot be capped, shut off or locked out, a system must be in place to identify what utilities are active or de-energized. All utilities must be shut off, capped or locked out of service beyond the building line before demolition work is initiated. A Hazard Assessment must be performed prior to the start of work to identify any hazardous chemicals, gases, explosives, flammable materials or similarly dangerous substances that may have been used on the property.
- c) Where employees are exposed to fall hazards, guardrail and personal fall arrest systems must be used (see fall protection). Hole covers must be identified and secured against accidental displacement (see fall protection).
- d) Any openings cut in a floor for the disposal of materials can be no larger than 25% of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place.
- e) Employee entrances to multi-story structures being demolished shall be completely protected by installing a canopy or sidewalk shed that is at least 8 feet out from the building with the walkway at least 2 feet wider than the building entrance/exit.
- f) Turner must ensure that the subcontractor has verified that all local ordinances and permitting issues have been addressed as they relate to demolition.

2. Stairs, Passageways and Ladders

- a) Access to a structure being demolished will be restricted to designated means of access and egress. Other access points will be closed at all times.
- b) All designated access points will be periodically inspected and maintained in a clean, safe condition.

3. Chutes



- a) No material may be dropped to a point outside the building unless a protective barricade is established. The material being dropped cannot be deflected or bounced any closer than 20' to the protective barricade.
 - b) All chutes must be entirely enclosed except for openings at or slightly above the floor level for the insertion of materials.
 - c) A substantial gate must be installed in each chute at or near the discharge end. A competent person must be assigned to control the operation of the gate and the backing and loading of trucks.
 - d) Chutes must be designed and constructed of such strength as to eliminate failure due to the impact of material and debris loaded into them.
 - e) When machinery will be near a chute opening, floor bumpers 4 inches thick & 6 inches wide are to be utilized, to prevent equipment from getting too close to the edge.
4. Removal of Walls, Floors & Steel
- a) Masonry walls, including sections of walls, will not be permitted to fall onto the floor of the building under demolition unless an engineer has determined that the floor can withstand the imposed load.
 - b) No wall section, more than one story in height, will be permitted to stand alone without lateral bracing unless it was designed to stand alone.
 - c) Structural or load-supporting members of any floor will not be cut or removed until all stories above such a floor have been demolished or removed.
5. Removal of Walls, Floors and Material with Equipment
- a) Mechanical equipment will not be used on floors unless the floors are of sufficient strength to safely support the equipment.
 - b) Mechanical equipment will only be used for its intended purpose according to the manufacturer's recommendations.
6. Removal of Steel Construction
- a) Steel construction will be dismantled column length by column length, tier by tier.
 - b) When floors have been removed, planking 10" wide by 2" thick must be used by employees engaged in razing the steel framing.
7. Mechanical Demolition
- a) No employees will be permitted in an area where "ball" or "clam" work is being performed. Only employees necessary for the performance of the operation may be permitted in this area.
 - b) The area must be identified with warning barricades and signs.



- c) During this operation continuous observations, by the competent person, must be made to identifying potential areas of failure.
8. Storage
- a) Storage of material or debris on any floor shall not exceed the allowable floor loads.



Electrical Hazards Prevention

I. Policy Statement

Use of electricity on the jobsite poses serious hazards, with employees potentially becoming exposed to such dangers as electric shock, electrocution, fires and explosions. All Turner employees and subcontractors working on a Turner project will comply with NFPA 70E Electrical Safety Practices and 29 CFR 1926, Construction Industry Regulations, Subpart K – Electrical in addition to the following guidelines.

II. Procedures

1. Working On or Near Exposed Energized Parts

- a) It is Turner policy that no one works on live electrical circuits. If a situation arises where it is impossible to perform a task with the circuit de-energized, the Turner Superintendent or Safety Manager shall contact the Business Unit Environmental, Health, and Safety Director prior to performing the work. A formal pre-construction meeting shall occur prior to any such work occurring. All Hot electrical work shall comply with NFPA 70E Requirements.
- b) Only qualified persons may work on electric circuit parts that have not been de-energized under the procedures of 1910.333.
- c) Such persons must be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials and insulated tools.
- d) All work must be completed with strict compliance to NFPA 70-E requirements and guidelines.
- e) The sub-contractor shall provide proof of training for their workers.
- f) Light switches and receptacles must be protected by permanent or temporary cover plates prior to energizing the circuit.
- g) All boxes containing energized circuits must have a cover in place, regardless of height.
- h) All electrical panels (temporary or permanent) must be locked at all times.
- i) Electrical room doors shall be secured at the earliest possible date.
- j) Even when all conducting parts are 100% insulated, entry into all junction and pull boxes will be treated as energized work until made safe by the steps below.
- k) Always de-energize if possible, following the lock-out/tag-out procedure discussed in this plan.
- l) When removing a cover from a junction box, before working, inspect all energized current-carrying parts. Check insulation and splices for damage. This inspection should be done by journeyman electricians as “energized work,” adhering to NFPA



70E practices and using arc-flash gear. Use infrared testing if necessary (for instance, if there is observed damage that appears to be due to excessive heat at a splice or a loose mechanical connection).

- m) After inspection, while still adhering to NFPA 70E and wearing appropriate arc flash gear, protect all conductors with blankets or barriers to prevent shock or damage during cable pulling.
 - n) Care should be taken during the installation/removal of sheaves to prevent contact and damage to energized conductors.
 - o) If the above steps cannot be taken to control the potential for electrical hazards, then work in the box will require appropriate arc-flash protection.
2. Ground Fault Circuit Interrupters
- a) All 120-volt, single-phase 15 and 20 ampere receptacle outlets which are not part of the permanent wiring of the structure and which are in use by employees shall have approved GFCI's.
 - b) **Turner requires that all projects are 100% GFCI compliant.**
 - c) The installing subcontractor, i.e. the electrical subcontractor, shall test each power receptacle for proper installation including polarity, grounding, etc. The electrical subcontractor will conduct and document monthly tests after the initial installation.
3. Electric Tools
- a) All portable electric tools such as saws, hammers, drills, vibrators and float machines must bear the label of a Certified Testing Agency, such as Underwriters Laboratories, CSA, ETL, or the like.
4. Extension Cords
- a) Only round, heavy-duty (type S, SJO, SJTW, ST, SO, STD), minimum 14 gauge cords are acceptable for use on site.
 - b) Cords must be maintained in their original design configuration.
 - c) Any cord which is damaged or has the grounding pin removed shall be removed from service.
 - d) Plug ends can only be repaired by a qualified electrician.
 - e) Whenever an extension cord is used for construction work, a GFCI is required between the extension cord and the receptacle.
 - f) Some electrical cords cannot be connected in series. Manufacturer's recommendations must be followed.
 - g) All electrical cords shall be elevated 8' in the air in hallways, corridors, aisles, stairways, doorways, and exit areas where a tripping hazard may occur.



- h) If the cords cannot be elevated, they shall be protected from damage by equipment, carts, trucks, and other rolling objects.
 - i) Extension cords shall not be fastened with staples, hung from nails, or suspended with non-insulated wire.
- 5. Temporary Wiring
 - a) All temporary wiring and lighting must meet current NEC codes. Flat cords (Romex) are not to be used as a flexible cord and are to be hardwired.
 - b) Temporary lighting must never be put on the same circuit as temporary receptacles.
- 6. Temporary Lighting
 - a) The minimum illumination level is 5 foot-candles.
 - b) Installation of temporary lighting must be per manufacturer's specifications and in compliance with OSHA, NFPA, NEC and local codes



Excavations

I. Policy Statement

The intent and purpose of this policy is to limit and/or eliminate the dangers associated with excavation and trenching operations that could expose workers to the possibility of serious injury or death. Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, and Subpart P – Excavations in addition to the following guidelines.

II. Procedures

1. Specific Excavation Requirements

- a) A comprehensive training program in the recognition, identification, evaluation and control of excavation hazards must be provided to all workers prior to working in an excavation or trenching operation.
- b) Underground utility installations must be identified and marked prior to beginning any excavation. The Contractor's proposed method for identifying known utilities must be identified as required by Turner Construction's Ground Penetration Request Permit. The Project Superintendent will ensure that JHA's are completed and reviewed for all excavation activities for Turner, subcontractors and all their tiers.
- c) A competent person must be identified and submitted to Turner prior to the start of work.
- d) The competent person will be on-site during all excavation work to determine the soil type and its stability by performing one visual and one manual test in accordance with 29 CFR 1926, Subpart P Appendix A.
- e) Inspections must be conducted daily and after every rainstorm or other hazard-increasing occurrence. Daily inspection reports must be submitted to Turner upon request.
- f) All excavations, regardless of depth, shall be protected by safety fence or guardrails
- g) Any excavation greater than 4' in depth must have access/egress provided. The maximum travel distance to a means of egress cannot exceed 25'.
- h) A Ground Penetration Request Permit must be utilized when a sub plans to dig deeper than 6 inches in depth.

2. Requirements for Protective Systems

- a) **Excavations greater than 4 feet in depth must be protected by one or more of the following systems:**
 - Sloping / benching of sides to allowable configurations and slopes.
 - Cannot bench C type soil.



- Using tabulated data.
 - Utilizing a trench box or shield.
 - Using a slope or shield system designed by a registered professional engineer. Refer to 29 CFR Subpart P, Appendix B.
 - Shield within 2 feet of the bottom of trench,
 - Employees are not permitted in the trench when the shield is moved,
 - Shield sticks up 18" above the top of slope.
- b) Spoil piles must be kept back no less than two feet from the leading edge of an excavation.
- c) A registered professional engineer must design sloping or benching systems for excavations greater than 20 feet in depth.
- d) Persons walking or working adjacent to an excavation greater than 6 feet in depth must be protected from fall hazards in accordance with Turner's 100% Fall Protection Policy.

3. Training Requirements

- a) Each employee affected by the excavation and trenching systems must be trained in the procedures specific to the project, i.e. access / egress points, location of utilities, etc.
- b) Each affected employee must be trained in all sloping, benching, and shoring procedures prior to entering the excavation or trench.
- c) A competent person must be on-site throughout the excavation and/or trenching operation to determine soil type through visual and manual testing, hazard identification, effectiveness of sloping, benching, or shoring procedures, etc.
- d) Atmospheric monitoring, if deemed necessary by the Competent Person or other competent party, must be documented and conducted by someone trained in the use of atmospheric monitoring equipment.

GROUND PENETRATION REQUEST PERMIT

This request form must be completed and authorized prior to penetrating the ground greater than 6 inches anywhere on site. The contractor disturbing soil is required to contact the locator and review as-builts. J.H.A. **MUST** be submitted prior to commencing all ground-penetrating activities on site. And prior to the start of the work in the field, the supervisor will conduct a Pre-Task Planning meeting with the crew performing the work.

Date: _____

Contractor requesting excavation / surface penetration: _____

1. Name of Superintendent / Foreman _____ Phone _____

Anticipated Dates of Work: _____

Anticipated Hours of Work: _____

Remarks / Clarifications (as necessary) _____

Location of excavation or surface penetration: _____ (attach plan)

Description of Work: _____

Means of disturbing soil (*check one*):

Excavator/Heavy Equip _____ Backhoe _____ Pneumatic Driver (fence posts) _____
Drilling/Auger _____ Motorized Saw _____ Hand Removal (Shovel) _____ Other: _____

Contractor's Proposed Method of Identifying Known Utilities (Circle One)

- | | | |
|---|-----|----|
| 1. Vacuum Excavating | Yes | No |
| 2. Ground Penetrating Radar | Yes | No |
| 3. Hand Excavation | Yes | No |
| 4. Other Explain : _____ | | |
| 5. Were all known utilities identified? | Yes | No |
- If no, which known utilities were not identified and why?

Layout of Proposed or New Work (Circle One)

1. Has the Contractor clearly identified the line of the proposed excavation Yes No

Utility Locate Organizations:

1. Identify organizations that have completed utility locates.

_____	_____	(date / permit)
_____	_____	(date / permit)
_____	_____	(date / permit)

Approved Private Locator Company Name: _____

Method of Locating: _____

Identified Utilities: _____

Have all known Utilities around the facility been physically located on the ground as applicable? Identify point of origin and point of termination of each line.

- a. Power N/A Yes No

GROUND PENETRATION REQUEST PERMIT

b. Control	N/A	Yes	No
c. Grounding	N/A	Yes	No
d. Comm / Data	N/A	Yes	No
e. Water	N/A	Yes	No
f. Sewer	N/A	Yes	No
g. Gas	N/A	Yes	No
h. Other	N/A	Yes	No

Utility Delineation:

Has a ten foot utility channel "five feet on either side of the known utilities" been marked or delineated with snow fence, orange silt fence or the equivalent where the new work crosses the utility to ensure adequate recognition? *(Circle One)* Yes No

As Built Reviewed? *(Circle One)* Yes No Date of Drawings/Docs: _____

Documented Safety Preplanning Meeting *(Circle One)*: Yes No

Are any overhead lines in the area? *(Circle one)*: Yes No
If yes, they **MUST** be marked at ground level with signage.

Have the areas beneath the concrete slabs been X-rayed prior to any saw cutting or removal? Yes No

Competent Equip Oper. *(Print)*: _____

Foreman *(Print)*: _____

Spotter Required? *(Circle One)* Yes No

Are there existing utilities in the area described in this request? *(Circle One)* Yes No

IF YES, the areas to be excavated are clearly marked-out and utilities within or near the proposed excavation will be "pot-holed" every 15 feet at a minimum using a vacuum process and protected through backfill operations. If multiple known existing utilities are within or near the proposed excavation, increased potholing will be required as determined on the JHA. Unknown existing utilities may be in the area of the work and excavation shall be done with due diligence, strict adherence to the Job Hazard Analysis (JHA), and awareness to prevent damage to unknown utilities.

CERTIFICATION:

By signing below, I understand that falsifying any part of this request will lead to my immediate dismissal from this project and that my employer will be responsible for any damages incurred as a result of my negligence. I certify that all records of existing utilities in the described area, including but not limited to As-Built, Mark-Out and Underground Utility Coordination Reports have been examined and ALL KNOWN UTILITIES HAVE BEEN IDENTIFIED AND WILL BE PROTECTED FROM DAMAGE. Employees not aggressively identifying and protecting utilities will be removed from the project.

Subcontractor Superintendent/Foreman: _____

Turner Superintendent: _____



Fall Prevention

I. Policy Statement

Turner has a **Zero Tolerance Policy** in effect for violations of our 6' fall prevention policy. Anyone found violating this policy may be permanently removed from the project. Each contractor must designate a competent person trained in fall prevention techniques and submit their qualifications to Turner upon request. Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart M - Fall Protection, in addition to the following guidelines.

II. Procedures

1) General Fall Prevention Requirements

- a. Each contractor, with employees exposed to a fall greater than 6', must submit their fall prevention plans to Turner prior to beginning work on site. The subcontractor and Turner staff will conduct a weekly inspection of their system.
- b. At no time shall a Safety Monitor system be used as a means of fall protection.
- c. Subcontractor shall review all work at height and maintain the highest level of control. Robust physical barriers shall be utilized as a first level of control, with PPE, including the use of Fall Restraint or Fall Arrest being the absolute last resort. All fall prevention systems need to be subject to engineering checks and personal fall restraint or arrest systems to include engineered attachment points and trained personnel
- d. With regard to fall of materials, Turner operates with a strict "No Gaps" policy. All working platforms or edge protection must be constructed to ensure there are no gaps which material could fall through. Employees must be protected from falling objects by the installation of toe boards, barricades, safety nets or canopy structures.
- e. Where a risk of materials falling or being dropped, including during a lifting operation, an exclusion zone must be established. The exclusion zone should be constructed with physical barriers such as wood or metal guardrail systems, cable wire rope or chain or flagging. Danger and Caution tape will not be accepted for use in exclusion zone construction. The exclusion zone must be secured from tipping and signed. The size of the exclusion zone must consider deflection or arc of the falling material.
- f. All tools, materials or equipment which have the potential to breach the perimeter protection must be positively secured back to the worker or structure through the use of tool lanyards or synthetic rope of line (natural fiber rope is not permitted). Lanyards or ropes must be appropriately sized for the weight of the tool, material or equipment. Anchorages must be snap-hook, carabineer, shackle or similar device that provides positive locking. The use of knots to secure lanyards is not permitted. Subcontractors must evaluate the size and weight of any object which will be secured to a worker's wrist, belt, etc. to ensure it will not cause injury in the event it is dropped. Tethering also applies when there is falling object exposure for employees in the vicinity of elevated work, even when "exclusion zones" are used.



- g. A Personal Fall Arrest System (PFAS) comprised of a full body harness, 2 lanyards with double locking snap hooks or retractables, a guardrail and / or safety net system must be in place to protect all employees working above 6 feet.
- h. Covers for roof and floor openings shall be capable of supporting, without failure, twice the weight of the employees, equipment and materials that may be imposed on the cover at any one time. All covers shall be secured when installed to prevent accidental displacement by the wind, equipment or employees. All covers shall be marked with the word "OPENING Do Not Remove" to provide warning of the hazard. Turner recommends that holes greater than 18"x 18" be protected by a guardrail system. Protection systems must be sufficient to avoid harm or hazard.
- i. Any floor opening 2" or larger must be protected by a cover of sufficient protection to avoid any harm or hazard.

2) Fall Prevention Systems

a. Guardrail Systems

- The top rail height of a guardrail system must be 42" to 45". Midrail heights must be half of that distance. If stilts are used in the vicinity, the rail must be increased by the height of the stilts used.
- Perimeter cable may be 1/2" steel cable, but in no situation may they be less than 3/8" steel cable.
- The cable must be flagged at 6' intervals and must be terminated with three "Crosby clips" on each end & deflect no more than 3". The cable rail cannot deflect below 39".
- The U-bolt clips must have the U-bolt section on the dead or short end of the rope and the saddle on the live or long end of the rope.
- When using cables for perimeter guarding closed turnbuckles are to be used for every 3 bays or 100 feet, whichever is less.
- A Personal Fall Arrest System (PFAS) must not be attached to a guardrail system unless the system is designed by a Professional Engineer to accommodate the PFAS.
- Guardrail systems must be able to withstand a force of 200 lbs. in all directions, without failure, and be smooth surfaced to prevent hand injuries. The use of metal studs or similar is prohibited.
- The sub-contractor installing the perimeter cable guardrail system shall submit a design with details on how the system will be installed and maintained.

b. Safety Net Systems

- Safety net systems must be installed as close as practical below the working deck, not to exceed a distance of 30'.
- Safety net systems must be drop tested after initial installation and before being used as a fall prevention system.
- Additional drop tests are required after any repair, whenever the nets are relocated and at 6-month intervals, if the nets are left in place.

c. Personal Fall Arrest Systems



- A PFAS must be used when working from suspended scaffolds, articulating boom lifts or when working above the protective system over floor openings and unprotected floor openings and unprotected perimeter edges.
 - A competent person must assure that fall distance calculations have been evaluated in each circumstance where a PFAS is used. The competent person must ensure that the intended uses of all PFAS assemblies are reviewed for each application on the project to ensure they are truly fit for the purpose which they are intended.
 - A PFAS is not required when climbing up or down a ladder. However, if employees are working from a ladder, fall protection is required.
 - Employees must use positive fall prevention devices when working in proximity to any leading edge work.
 - All leading edge construction requires the use of a Controlled Access Zone (CAS) or Controlled Decking Zone (CDZ)
 - Exterior plywood, or equivalent, shall be installed around columns where planks or metal decking do not fit tightly. The materials used must be of sufficient strength to provide fall protection for personnel and prevent objects from falling through.
 - All anchorage points must be capable of supporting a load of no less than 5000 lbs. Engineered (PE Stamp) anchorage point and fall protection systems are also authorized.
 - Steel erectors, connectors, and metal decking installers must utilize 100% fall prevention devices at all times when working over 6'.
 - Horizontal lifelines must be designed by an engineer and installed under the supervision of a qualified person. A safety factor of two must be maintained.
 - Turner does not allow the use of Safety Monitor Systems.
 - Adequate fall prevention devices must be used at all loading platforms prior to removing existing perimeter protection.
- d. Warning Line Systems
- If a warning line is utilized it must be 15 feet or more back from the edge.
 - If a worker is required to work or enter between the warning line & the edge, 100% fall protection is required.
 - The warning line height must be between 34" & 39" from the walking/working surface.
 - The rope, wire or chain must have a breaking strength of 500 pounds and must be flagged every 6 feet.
 - After erected, the stanchions must be secured from tipping due to wind, etc.
- e. Controlled Decking Zone (CDZ)
- A CDZ can be established as a substitute for fall protection (rails and covers)
 - where metal decking is initially being installed and forms the leading edge of a work area over 15 and up to 30 feet above a lower level. [29 CFR 1926.760(c)]
 - Leading-edge workers in a CDZ are required to be protected from fall hazards (personal fall arrest system at a minimum).
 - Have completed CDZ training in accordance with 29 CFR 1926.761.
 - Employees who are not engaged in leading-edge work and properly trained in the hazards involved are prohibited from entering the CDZ.
 - The CDZ is required to:



1. Be no more than 90 feet wide and 90 feet deep from any leading edge. It may not exceed 3,000 square feet of unsecured decking.
 2. Have designated and clearly marked boundaries with control lines or the equivalent. NOTE: Control lines are commonly used as a marker because they create a highly visible boundary. See requirements below.
 3. Have safety deck attachments placed from the leading edge back to the control line.
 4. Have at least two safety deck attachments for each metal decking panel.
- Final deck attachments and the installation of shear connectors are prohibited from being done in the CDZ.
 - Perimeter safety cables must be installed at the final interior and exterior perimeters of multi-story structures as soon as the decking has been installed. This means there should be no unprotected openings or edges on the non-leading edge side of the "control line."
 - A control line for a CDZ must be erected not less than 15 feet nor more than 90 feet from the leading edge. Control Lines must be a physical barrier. This will primarily be a rigid guardrail, tight cable or flagging. The rope, wire or chain must have a breaking strength of 500 pounds and must be flagged every 6 feet. Caution and Danger tape, and spray-painted lines cannot be used.
 - Each line is constructed in such a way that its lowest point (including sag) is not less than 39 inches from the walking/working surface and its highest point is not more than 45 inches from the walking/working surface.

3) Training Requirements

- a. Each employee exposed to a fall hazard must be trained by a competent person in the recognition and avoidance of such a hazard. Proof of training shall be made available to Turner Construction upon request.
- b. Specific training includes, but is not limited to the following:
 - The type of fall exposures expected.
 - The correct procedures for erecting, maintaining, dismantling and inspecting of any fall prevention system used by the employee.



Fire Protection and Prevention

I. Policy Statement

Each subcontractor working on a Turner project must comply with 29 CFR 1926, Construction Industry Regulations, Subpart F – Fire Protection and Prevention, in addition to the following guidelines.

II. Procedures

1. General Requirements

- a) A site-specific fire prevention program shall be developed at each project.
- b) Hot work permit procedures, fire watches, shields and blankets must be considered when developing site-specific fire prevention programs. All areas and equipment where hot work is anticipated is to be reviewed in detail by the subcontractor with the Turner Superintendent and/or Safety Manager.
- c) All firefighting equipment must be clearly visible and access to the equipment must be maintained at all times.
- d) A 20 lb. ABC dry chemical fire extinguisher or equivalent must be provided for each 3,000 square feet of protected building area. It is required that an extinguisher be placed at every stairwell on each level.
- e) Travel distance to a fire extinguisher must not exceed 100 feet.
- f) Portable fire extinguishers must be inspected monthly. The documentation must be a weather resistant tag attached to the extinguisher. In addition, the fire extinguisher must have the pin secured by a safety pull tab to be considered serviceable.
- g) Every fire extinguisher must have an annual inspection..

2. Fire Prevention

- a) Temporary offices or trailers, when located inside of a building under construction, must be constructed of fire retardant materials.
- b) Combustible materials, such as cardboard, wooden pallets, etc., must be removed from the work area as it is created.



3. Flammable and Combustible Liquids
 - a) Flammable and combustible liquids must be stored in approved metal safety cans. An approved safety can is a closed container, not more than 5 gallons, with a flash-arresting screen and a spring closing lid. Plastic cans are not permitted onsite.
 - b) Indoor storage of flammable or combustible liquids in excess of 25 gallons must be in an approved cabinet.
 - c) Onsite fuel tanks must be double walled, be protected from construction vehicle traffic & have a spill containment system capable of holding all contents of the tank in the event of a leak. Dirt berms & dikes are not permitted. Jersey barriers are considered a best practice for protecting fuel storage containers or storage of other flammable or combustible materials.
 - d) At least one 20 lb. ABC dry chemical fire extinguisher must be located within 25' to 75' of an outdoor storage area.
4. Liquefied Petroleum Gas (LPG)
 - a) LPG must never be stored inside buildings. LPG gas must not be used in any building unless authorized by Turner Construction.
 - b) When damage to LPG systems from vehicular traffic is possible, precautions must be taken to eliminate the hazard.
5. Temporary Heating Devices
 - a) Fresh air must be supplied in quantities sufficient to maintain the health and safety of all employees. If a competent person deems natural airflow inadequate, then mechanical ventilation must be provided.
 - b) Heaters used in the vicinity of tarpaulins, canvas or similar coverings must be located at least 10' from the covering and be secured so as to prevent ignition due to wind.
 - c) Open fires are not allowed on Turner projects.
 - d) Solid fuel salamanders are not allowed in buildings or on scaffolds.
 - e) Hot Work permits are required for temporary heating devices.
6. Housekeeping is the best defense against fires. Place all trash and debris in proper containers. Place oily and/or paint soaked rags in a covered metal container.
7. Hot Work Permits
 - a) A Turner Construction Hot Work Permit will be filled out by the Subcontractor Foreman/Supervisor after surveying the area. The subcontractor must review the area and permit with a Turner Superintendent and/or Safety Manager and get their initials on the permit prior to starting work. One copy will be turned into the Turner Project Superintendent/Safety office and one copy posted in the area where the hot work is being performed prior to beginning any hot work. These notices include any activity



- that may present a fire hazard. These activities include but are not limited to cutting, burning, welding, soldering, brazing, and grinding where sparks are created.
- b) Subcontractor shall provide a fire watch person on duty at all times (i.e. including breaks, lunch, etc.) during hot work operations. A 30 minute minimum fire watch is required after hot work is completed. The **fire watch time requirement may need to be increased in sensitive areas (such as historic buildings, healthcare facilities, etc.) as determined by need and or contract.** Each subcontractor is responsible to notify Turner when the fire watch is complete.
 - c) The fire watch person is required to be trained as to their duties and responsibilities and have no other duties. Fire watch procedures are to be reviewed with the subcontractor by the Turner Superintendent and/or Safety Manager. In some cases two or more fire watches may be required.
 - d) Smoke exhaust equipment (smoke eaters) shall be provided by the subcontractor in occupied buildings or where otherwise required. The exhaust duct should be coordinated through Turner.
 - e) The disconnecting or disengaging of fire zones or smoke sectors/detectors shall be coordinated with the building owner or manager.
 - f) Subcontractors installing tarps that may be exposed to sparks are required to use fire retardant material.



Hand and Power Tools

I. Policy Statement

All Turner Employees and Subcontractors working on a Turner project must comply with 29 CFR 1926, Construction Industry Regulations, Subpart I – Tools – Hand and Power, in addition to the following guidelines.

II. Procedures

1. General Requirements

- a) All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition, per the manufacturer's guidelines.
- b) If the tool is designed to accommodate a guard or handle bar, the guard or handle bar and must be in place while the tool is being used.
- c) Additional personal protective equipment (PPE), such as a face shield, goggles and/or hearing protection, may be required while operating a tool.
- d) Typical box-cutters and utility-knife type cutters are not allowed on Turner projects. Cutters and knives must have automatic self-closing blade-guards, or, blades that retract into the handle when the blade loses contact with the cutting surface.

2. Electric Powered Tools

- a) All power tools must be double insulated or provided with a three wire, grounded connection.
- b) All cords are to be inspected prior to their use. Cords having the outer jacket damaged shall be removed from service or must be replaced or repaired per the manufacturer's instructions.
- c) Only a qualified electrician may replace a cord and/or cord end.
- d) All hammer-drills and rotary hammers must have integrated technology, such as a "safety clutch," that will stop drill-bit rotation should the bit bind up in the hole. An example of this is Hilti's Anti-torque control (ATC) technology.

3. Pneumatic Power Tools

- a) Each connection on a pneumatic tool and air hose must be secured with a "whip-check" or similar device.
- b) All air hoses, with an inside diameter exceeding ½ inch, must have a flow reduction device at the supply source to reduce pressure in case of hose failure.
- c) Compressed air must not be used for cleaning unless the pressure is reduced to less than 30 p.s.i. and appropriate guarding and PPE are in place.
- d) The 30 p.s.i. requirement does not apply to "blowing down" concrete decks or forms; however a spring loaded "dead man" control must be attached to the blowpipe.



4. Fuel Powered Tools

- a) Fuel powered tools must be stopped and turned off while being refueled, serviced or maintained.
- b) Combustion powered tools/equipment must not be utilized inside structures unless an evaluation has been conducted to ensure fumes will not affect personnel. The subcontractor who is utilizing the equipment is responsible to test and monitor the indoor air quality. Scrubbers and/or mufflers may be required as dictated by the testing.

5. Powder-Actuated Tools

- a) The manufacturer, or their representative, must train employees in the safe use of powder-actuated tools.
- b) The tool must be tested each day, according to manufacturer's recommendations, before loading to see that safety devices are in proper working condition.
- c) Tools must not be loaded until just prior to the intended firing time.
- d) Loaded tools must not be left unattended.
- e) All tools must be used with the correct shield, guard or attachment recommended by the manufacturer.
- f) No lead based cartridges are to be used.
- g) Cartridges are to be safeguarded at all times.

6. Abrasive Wheels and Tools

- a) The RPM rating on all grinding machine motors must not exceed the speed rating of the grinding wheel attachment.
- b) All abrasive wheels must be closely inspected by the competent person and ring tested before mounting to ensure they are free from cracks or defects.

7. Woodworking Tools

- a) All fixed, power driven woodworking tools must be equipped with a disconnect switch that can be locked out in the off position.
- b) All portable, power driven circular saws must be equipped with guards above and below the base plate or shoe.
- c) When the tool is withdrawn from the wood, the lower guard must automatically and instantly return to the covering position.



LockOut / TagOut Procedure

I. Policy Statement

The intent and purpose of this procedure is to limit and / or eliminate the danger of the unexpected release of stored or residual energy that could cause injury or death to the employee or to the general public. Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart K, Section 1926.417, "Locking and Tagging of Circuits", in addition to the following.

II. Procedures

1. LockOut/TagOut (LOTO) will not be considered for use until all other avenues of attaining a "zero-energy state" have been exhausted.
2. All subcontractors working with electrical systems are required to have a written LockOut / TagOut Procedure. A **Competent Person** shall be responsible to control all aspects of the LockOut / TagOut (LOTO) procedure. They will ensure coordination with the appropriate tradesmen.
3. If a system can be locked out through design or by other means, this will be the preferred method.
4. The lockout device shall be substantial enough to prevent removal.
5. The lock shall be a separately keyed lock for use only with the lockout system.
6. The lockout device must be tagged with the name of the employee and their company. There shall be one lock for each employee (including Turner) exposed to the system.
7. If working in a multi-shift environment, each employee shall remove their respective locks at the end of their shift, with Turner being the last lock removed.
8. Employees shall not leave their lock on past the end of their shift. The use of 100% LOTO must be maintained until the completion of the task. **Verification by all competent persons in charge of the LOTO shall be completed prior to re-energizing the system.**
9. If the energy isolation device cannot be locked out and a tag must be used, authorization from the Business Unit Environmental, Health, and Safety Director (BUEHSD) is required prior to start of work.
10. Tag out devices, including their means of attachment, shall be substantial enough to prevent accidental removal.
11. The tag shall warn against energizing the tagged out system such as: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate, etc.
12. The name of each employee shall be displayed on the tag.



13. The competent person shall be responsible for untagging and activating the system after all exposed employees have removed their tags.

III. Training and Documentation

1. Each employee affected by the LOTO procedure shall be trained in the procedure. Records of training will be kept on site and be made available to Turner Construction upon request.
2. Each employer utilizing LOTO must establish a program and utilize procedures for affixing appropriate lockout or tagout devices to energy isolating devices, and to otherwise disable machines, piping or equipment to prevent unexpected release of stored or residual energy in order to prevent injury to employees.
3. Each employee shall be trained in the identification of the lockout / tagout device.
4. A log shall be maintained on site that identifies the following:
 - Date of usage,
 - Number of locks and tags used,
 - Contractors involved,
 - Time of LOTO initiation,
 - Time of LOTO removal,
 - Designated competent persons.
5. In the event a lock is left on the lockout device and all of the subcontractors have verified with Turner that the lock should be removed and the system is safe to energize, a Turner Senior Manager must be notified. After consultation between the BUEHSD and the Turner Senior Manager, the subcontractor owning the lock may remove it.
6. This process must be **DOCUMENTED** to show you have followed all the steps to keep the workforce safe and have used "all reasonable means" to contact the employee who was responsible for the lock.
7. In the event an employee is discovered tampering with or violating the LOTO procedure, the employee will be removed from the project.

A comprehensive sample Lockout / Tagout Safety Program is available in Appendix E of this manual.



Material Handling and Rigging

I. Policy Statement

Material handling and rigging incidents account for a large number of workers compensation claims annually. Each contractor working on a Turner project must comply with 29 CFR 1926, Construction Industry Regulations, Subpart H – Materials Handling, Storage, Use and Disposal, in addition to the following guidelines.

II. Procedures

1. General Material Storage

- a) Aisles and passageways must be kept clear at all times for the safe movement of material handling equipment and employees. Storage areas must be kept free of accumulating materials that contribute to hazards of tripping, fire & pest harborage.
- b) Do not store material within 6' of any hoist way or interior floor opening.
- c) Do not store material within 10' of an exterior wall which does not extend above the material.
- d) Subcontractors must ensure each employee is trained in proper lifting techniques. Employees shall not lift more than 50 pounds per person. Mechanical means should be used as much as possible.

2. Rigging

a) General Requirements

- A maximum of (3) three members (only beams and similar structural members) may be hoisted per lift. Materials other than structural steel members may not be multiple lift rigged and lifted.
- Ensure the weight of the load and approximate center of gravity has been obtained.
- Rig the load in a manner to ensure balance and stability during lifting activities
- Individuals who rig loads must be qualified by their employer. An employer may not permit an individual to rig loads to be lifted by a crane unless the individual has received training and also has the experience appropriate to their level of work. All riggers must be documented as a qualified person.
- A competent rigging supervisor must be onsite and engaged in all critical lifts.
- Subcontractors must provide and maintain a current list of all qualified riggers to the Turner Project Staff.
- A qualified rigger must inspect all rigging to be used prior to each use. Routes for suspended loads must be pre-planned to ensure that no employee is required to work directly below a load, unless they are engaged in the connection of the steel.
- Inspections must also be conducted during use and where additional service conditions warrant.



- Defective or damaged slings must be removed from service immediately. Follow manufacturer's removal criteria.
- Taglines shall be utilized to control the load to minimize worker exposure to swinging loads.
- Review proper rigging requirements when lifting palletized materials.
- Slings in contact with sharp edges or corners should be protected with softeners or materials designed to prevent damage to the sling

b) Lifting Chains

- Alloy steel lifting chains must have a permanently affixed, durable identification tag stating size, grade, rated capacity and sling manufacturer. Only Grade 8 or better is permitted.
- Job made shop hooks or links, makeshift fasteners formed from rebar or bolts or other such attachments are not allowed on Turner projects.
- Lifting chain inspection criteria is based upon the frequency of use, the severity of the service conditions, the nature of the lifts being made and the experience gained on the service life of slings used in similar circumstances. Such inspections shall in no event be at intervals greater than once every 12 months. A written record must be provided to Turner upon request.
- Lifting chains must be visually inspected, prior to each use.

c) Wire Rope Slings

- The manufacturer's safe working loads must be followed at all times. Wire rope slings shall be removed from service if missing sling identification.
- Wire rope must not be used if, in any length of eight diameters, the total number of visible broken wires exceeds 10% of the total number of wires. Follow manufacturer's removal criteria.
- Wire rope must not be used if it shows signs of excessive wear, corrosion or defects.
- Slings must not be shortened with knots, bolts or other makeshift devices.
- Slings must be protected from sharp edges with padding, softeners or similar devices.
- Shock loading of a sling is prohibited and slings must not be pulled from under a load when the load is resting on the sling.

d) Synthetic Slings

- Each synthetic sling must be identified with the name of the manufacturer, rated capacities and type of material.
- Synthetic slings must be immediately removed from service if any of the following conditions are present; acid or caustic burns, melting or charring of any of the sling surface, snag, puncture, tear or cut, broken or worn stitches or distorted fittings. Follow manufacturer's removal criteria.

e) Shackles & Eye bolts

- Attachments, including, but not limited to hooks, rings, shackles, oblong links, pear-shaped links or other welded or mechanical links, must have a rated capacity sufficient for the lift.
- Eyebolts not shouldered to the load shall only be used for in-line loads.



- If the shackle is side loaded the rated load should be reduced according to the recommendations from the manufacturer. Each shackle body shall show the name or trademark of the manufacturer rated load and size.
- f) Chainfalls / Manual Chain Hoist: Inspected before each use. The hoist chain shall not be wrapped around the load. The load shall be attached to the load hook by suitable means. The load shall not be applied to the point of the hook.
- g) Winches: Attachments and anchorages for the winch base shall be capable of withstanding the loads imposed by the hoist during operating conditions.



Motor Vehicles, Mechanized Equipment and Marine Operations

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart O – Motor Vehicles, Mechanized Equipment, and Marine Operations. In addition, the Turner specific requirements as it relates to trucks driven onto Turner projects, the method used to load and unload equipment and materials from trucks on Turner projects and the preplanning needed to establish controlled access zones around trucks to protect workers and the general public, and the use of spotters, must be followed.

II. General Procedures

1. All operations requiring the use of heavy equipment will require a pre-planning meeting to coordinate and prevent injuries to workers and the public
2. All subcontractors delivering material and equipment to projects will be required to complete a risk assessment and pre task plan that must be performed prior to any loading/unloading activities to establish safe work procedures for working around trucks and to protect workers and the general public. This includes:
 - a) The subcontractor ensuring a risk assessment and preplan is conducted
 - b) The risk assessment completed prior to any work being conducted on the site with Turner safety or superintendent, and if high risk activities are identified, then no work should be completed until measures are taken to reduce or eliminate the risk.
 - c) All personnel involved with a loading or unloading operation should assess the potential hazards before the operation begins. A clear understanding of the procedures and communication between workers must be established.
 - d) Each project shall maintain a current site logistics plan clearly identifying controlled access or restricted access zones for truck loading and unloading, required traffic controls, and best practices for unloading or loading materials. Logistics plans must be updated regularly to reflect evolving conditions. Controlled access zones or restricted access zones must be flagged / barricaded on site and kept clean and clear of non-essential materials and personnel.

The pre task plan should include, but is not limited to:

- Accessing the site
 - Parking trucks safely; chock wheels and fully engage the parking brake during loading and unloading
 - Lighting is adequate for the work
 - Unloading procedures are clear and defined
 - The right equipment is chosen for the job
 - Damage reporting procedures are available for reporting incidents and near misses.
 - How the driver will be briefed on loading/unloading procedures and understand their responsibilities
 - Overhead power lines
3. All motor vehicles and material handling equipment, with an obstructed view to the rear, must have a reverse signal alarm audible above the surrounding noise.



4. Machinery with rubber tires that are capable of driving down a low speed road (<30 mph) must be equipped with an orange triangle on the back or a vehicle with their blinkers on.
5. A "spotter", wearing an ANSI approved high visibility traffic vest, may be used in lieu of an alarm, but only if such devices are not routinely supplied on such a vehicle. Vehicle must never back "blind" on a Turner project.
6. Drivers should visually inspect the area around the truck before moving it to assure all workers are clear prior to moving the truck.
 - a) The spotter must be used when backing any vehicle
 - b) When reversing, the vehicle must be equipped with a functioning audible alarm.
7. Forklift operator training records must be submitted to Turner prior to site use. The forks cannot be used for free rigging (straps or slings over forks). Forklifts with a hook or a winch attached are considered "cranes" per the crane standard.
8. A seatbelt must be provided and used when operating equipment on a Turner project.
9. All windows must be in full working condition. Any equipment with broken glass of any size, including mirrors will be taken out of service.
10. Each employee working near or crossing a site where equipment is in use must wear High Visibility Clothing.
11. Equipment without a rollover protective structure (ROPS) or seatbelt is not allowed on any Turner project.
12. The use cell phones (talking/texting) shall not be used while operating machinery/equipment or vehicles.
13. No one may work within 20' of motorized equipment like an excavator, backhoe, loader etc. unless that persons presence is fundamental to the operation underway and the operator can observe the person at all times.
14. All vehicles in use shall be checked at the beginning of each shift to assure that the following parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use: service brakes, including trailer brake connections; parking system (hand brake); emergency stopping system (brakes); tires; horn; steering mechanism; coupling devices; seat belts; operating controls; and safety devices. All defects shall be corrected before the vehicle is placed in service. These requirements also apply to equipment such as lights, reflectors, windshield wipers, defrosters, fire extinguishers, etc., where such equipment is necessary.
15. Cannot operate a machine/equipment within 20 feet of any overhead energized line, unless specifically outlined in the JHA/PTP and reviewed by the Turner Project Superintendent & Project Safety Manager if assigned.



16. Whenever visibility conditions warrant additional light, all vehicles, or combinations of vehicles, in use shall be equipped with at least two headlights and two taillights in operable condition.

III. Site Clearing

1. Workers engaged in site clearing shall be protected from hazards irritant and toxic plants (poison ivy, sumac, etc.)
2. Each worker is to be instructed in the first aid treatment available onsite in regards to irritant and toxic plants.
3. All equipment shall be equipped with roll over protection and shall have overhead protection.
4. The overhead protection on the canopy structure shall not be less than 1/8" steel plate or 1/4" woven mesh with no openings greater than 1" or equivalent.

IV. Pile Driving

1. Overhead protection shall not obscure the vision of the operator. The protection shall be equivalent to 2" planking or other solid material of equivalent strength.
2. Stop blocks shall be provided for the leads to prevent the hammer from being raised against the head block.
3. A blocking device, capable of supporting the weight of the hammer, shall be provided for placement in the leads under the hammer at all times when workers are working under the hammer.
4. Guards shall be provided across the top of the head block to prevent the cable from jumping out of the sheaves.
5. When leads must be inclined in the driving of batter piles, provisions shall be made to stabilize the leads.
6. Safety chains or equivalent shall be provided for each hose connection to prevent the line from thrashing around in case the coupling becomes disconnected.
7. Engineers and winchmen shall accept signals only from the designated signal person.
8. All workers shall be kept clear when piling is being hoisted into the leads.
9. When piles are being driven in an excavated pit, the walls of the pit shall be sloped to the angle of repose (type C soil) or sheet piled and braced.
10. **An Anti-two block device is not required when using leads in pile driving.**



Industrial Vehicles

I. Introduction

The Company has determined that certain powered industrial vehicles are utilized at its projects and has developed this policy to establish the procedures that must be followed for the use of such vehicles at the Company's projects.

II. Purpose

Provide for proper equipment selection, inspection and operation of certain powered industrial vehicles, including but not limited to All Terrain Vehicles (ATV) or Quads, Three Wheeler, Four Wheeler, Gators, Mules, and all other similar vehicles. Only vehicles that have previously been approved by the Operations Manager and BU Environmental, Health, and Safety Director for use at its projects may be utilized at the Company projects and must be in compliance with the policy. This policy also applies to vehicles owned and operated by Subcontractors and Subcontractor employees.

III. Insurance

All vehicles covered under this policy are to be scheduled to Turner's property plant and equipment (contractor's) policy. It is the responsibility of the jobsite project manager & accountants to properly report all equipment under this policy.

IV. Prohibited Vehicles

1. All vehicles with the following features (in combination) are prohibited from all Turner projects:

- 1) Typically carry one rider;
- 2) Have no rollover protection or seat belts; and
- 3) Have a handlebar similar to a motorcycle for navigation

These vehicles may be commonly referred to as All-Terrain Vehicles (ATV), Quads, Three Wheelers, or Four Wheelers (or other similar equipment). This prohibition includes vehicles owned by subcontractors as well.

2. All personal (owned by an individual) All-Terrain Vehicles (ATV's), Quads, Three Wheelers, Four Wheelers, Mules, Gators, or other similar equipment are prohibited on all Turner Projects.

V. Regulatory References

OSHA 29 CFR 1910.178, Powered Industrial Trucks, as applicable.

VI. Procedures

1. All powered industrial vehicles must be equipped as follows:

- a. Each vehicle must have a legible nameplates and markings that indicate its load limits;
- b. Any modifications and additions, which affect capacity and safe operation, must not be performed without manufacturer's prior written approval. Where modifications and additions



- are made, the capacity, operation, and maintenance instruction plates, tags or decals must be marked accordingly.
2. Where liquid fuels, such as gasoline, diesel fuel or LPG, are used for powered industrial vehicles the following precautions must be followed:
 - a. Appropriate handling and storage safeguards followed;
 - b. Fuel tanks must not be filled while the engine is running;
 - c. Spillage from refilling fuel tanks must be avoided;
 - d. Spillage or oil or fuel must be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine;
 - e. No vehicle may be operated with a leak in the fuel system until the leak has been corrected;
 - f. No smoking or open flame while refueling; and
 - g. Appropriate PPE must be worn while refueling.
 - h. Refer to Section IV of the Carbon Monoxide Exposure Prevention program for information regarding requirements for use of equipment with internal combustion engines.
 3. Where electric powered industrial vehicles are used, the following precautions must be followed:
 - a. Battery charging installations must be located in areas designated for that purpose;
 - b. Facilities must be provided for flushing and neutralizing spilled electrolyte;
 - c. Facilities must be provided for fire protection;
 - d. Facilities must be provided for protecting charging apparatus from damage by trucks;
 - e. Facilities must be provided for adequate ventilation for dispersal of fumes from gassing batteries;
 - f. Material handling equipment must be provided for handling batteries;
 - g. Reinstalled batteries must be properly positioned and secured in all electric powered trucks;
 - h. A carboy tilter or siphon must be provided for handling electrolyte;
 - i. When batteries are charged, acid must be poured into water and water is not poured into acid;
 - j. Appropriate PPE must be worn when adding acid;
 - k. Vehicles must be properly positioned with the brakes applied before their batteries are changed or charged;



- I. When batteries are charging, their vent caps must be clear and functioning and the battery (or compartment) cover(s) must be left open to dissipate heat; and
 - m. Precautions must be taken to prevent smoking and other sources of ignition out of the charging area.
4. Adequate lighting must be provided for all powered industrial vehicle operations.
5. Carbon monoxide concentrations as a result of powered industrial vehicle operations must not exceed the Permissible Exposure Limit of 50 ppm.
6. Powered industrial vehicle drivers must follow appropriate safe operating practices as contained in the manufacturer's manual. Non-authorized associates must never operate powered industrial trucks.
7. Powered industrial trucks must be inspected and repaired as follows:
 - a. Drivers must conduct pre-operation and post-operation safety inspections at least at the start of each shift on which the vehicle is used;
 - b. Any power-operated industrial vehicle not in safe operating condition must be removed from service;
 - c. All repairs must be made by authorized personnel;
 - d. Repairs must be made only in a location designated for such repairs;
 - e. Vehicles in need of repairs to the electrical system must have the battery disconnected prior to such repairs;
 - f. All replacement parts used on industrial vehicles must be equivalent to the safety features as used in the original design;
 - g. Industrial vehicles must not be altered so that they have different configurations, extra parts or additional counterweighting, unless approved by the vehicle manufacturer;
 - h. Any vehicle that emits hazardous sparks or flames from the exhaust system must be immediately removed from service, and not returned to service until the cause for the emission of such sparks, and flames has been eliminated;
 - i. When the temperature of any part of any vehicle is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle must be removed from service and not returned to service until the cause for such overheating has been eliminated; and
 - j. Industrial vehicles must be kept in a clean condition, free of lint, excess oil and grease.

VII. Training

1. All authorized drivers must complete training as follows:



- a. Manufacturer requirements (as coordinated through the dealership of the equipment) for the safe operation of the vehicle including use of personal protective equipment, authorized surfaces for operation of the vehicle, weight restrictions, and other operational conditions.
 - b. OSHA 29 CFR 1910.178 Powered Industrial Trucks.
 - c. This training shall be written formally into the Project Specific Safety Plan by the project team, approved by the BU Environmental, Health, and Safety Director.
 - d. A documented sign-off for the authorized driver must be a part of the training manual provided with the training.
2. All non-authorized associates who work in areas where powered industrial vehicles are in operation will be instructed to never operate any powered industrial vehicle, and will be instructed in work practices for pedestrians working in those areas.
 3. Retraining must be repeated at least every three years and as necessary to maintain the required driver skills and when:
 - a. The operator has been observed to operate the vehicle in an unsafe manner;
 - b. The operator has been involved in an accident or near-miss incident;
 - c. The operator has received an evaluation that reveals that the operator is not operating the vehicle safely;
 - d. The operator is assigned to drive a different type of vehicle; or
 - e. A condition in the workplace changes in a manner that could affect safe operation of the vehicle.



Unmanned Aircraft Systems/Drones Policy

I. Policy Statement

In our ongoing efforts as the leader in construction safety, Turner has adopted the following policy to ensure that Unmanned Aircraft Systems (UAS)/Drones are operated in a manner that meets or exceeds all known federal, state & local municipality, Drone Safety Council, Unmanned Safety Institute, FAA & DOT standards & regulations (as of the 3/4/2015 version these are being proposed by congress). The most restrictive guidelines take precedence over our limits. Operator must strictly adhere to all manufacturer operational requirements. Modifications can only be made according to the manufacturer instructions and approvals. The operator, by federal guidelines, cannot operate a drone for hire without meeting at a minimum FAA regulation Title 14 part 107, and must provide Turner with this documentation.

It is our policy that all drones utilized in Turner Construction must be from a third party, licensed/approved by the FAA to operate in a commercial setting and insured per Turner Limits. TURNER CONSTRUCTION EMPLOYEES WILL NOT OPERATE DRONES. Also, ONLY ONE DRONE CAN BE FLOWN ON A PROJECT AT ANY GIVEN TIME.

A coordination meeting must be held to discuss/plan out use of a drone. Discussions must include other drones that might be in the same area being operated by other entities, FAA rules governing use of the drone under this particular scenario, city or state requirements, privacy issues, insurance requirements, flight plans, safety issues and mitigation plan, operating times, date the drone will be in use, protection of the public and workers, neighborhood concerns, type of drone being used, and overall compliance with this policy's rules and regulations. Meeting minutes and a flight plan will be published. A call will be held with Risk Management to review the plan prior to moving forward. All data obtained during the drone flight should be downloaded securely and not erased or duplicated without written approval.

UAS's/Drones can be hazardous if operated incorrectly and irresponsibly or without following specific safety guidelines and are operated by the young or inexperienced.

II. Procedures

1. A pre-flight Job Hazard Analysis must be developed by the operator at least 7 days prior to flight. The Job Hazard Analysis meeting and job walk must be held with the operator prior to actual operation. Look for sources that may cause RF interference (radio towers, transmitters, etc.). If it's reasonable to anticipate that these sources may cause RF interference, then they must be de-energized during the flight, or no flight may take place.
2. The pilot of the UAS/Drone must do a test flight in a clear area to show they have control of the drone. This must include a roll, yaw, back and forth, and a figure 8. If the pilot cannot maintain control they cannot not be allowed to operate on site.



3. Only UAS's/Drones powered by battery are permitted. Fuel operated UAS's/Drones are prohibited.
4. UAS's/Drones can only be operated when visual line of sight is maintained throughout the flight. The use of monitoring, corrective lenses like binoculars, and first person view goggles cannot be used by the operator as they are prohibited by the FAA.
5. UAS's/Drones must be operated between sunrise and sunset. No operating in the dark is permitted. Each drone has temperature requirements for flight. Most require at 104 degrees Fahrenheit and 0 degrees Fahrenheit the drones cannot be flown. The manufacturer paperwork detailing these requirements must be submitted to Turner and reviewed at the preplan meeting. All manufacturer recommendations must be followed.
6. UAS's/Drones cannot be flown over 400 foot altitude.
7. **UAS's/Drones will be operated during off hours such as weekends when the pedestrians, employees, vehicles, etc. are absent or minimal. It is NEVER permitted to operate a UAS/Drone over any person. Area below the flight path MUST be completely free of people.**
8. Maintain at least 100 feet between the UAS/Drone and people, vehicles, roadways (unless closed), buildings and electrical lines and power stations. This helps protect these in the event of an unplanned landing. In some areas, such as with a tower crane, 100 feet vertical clearance is not feasible to comply with keeping the drone under a 400 foot altitude. In these areas maintain 100 feet horizontally from the structure and a minimum of 30 feet vertically.
9. During set up and testing of the drone double check the measurement to the top of the highest point of adjacent buildings, cranes, etc. and verify the height. Measure to the top of crane first so flight heights and distances can be evaluated and maintained.
10. AS's/Drones shall not be flown over areas occupied by employees, subs or pedestrians. Areas where UAS/Drone are to be operated must be closed off with an exclusion zone large enough to anticipate where a UAS could drift/drop, accounting for elevation, wind and other factors.
11. Automobiles and other moveable pieces of property shall be removed from the flight area prior to launch when feasible. Exclusion zones shall include visible barriers and warning signs. Area monitors shall be assigned to keep people out of the exclusion zone. Take steps to protect non-moveable property and equipment where feasible.
12. Do not operate a UAS/Drone within 5 miles of an airport or where manned aircraft are operated (hospital helipad).
13. UAS's/Drones shall not be permitted to be operated when winds exceed the 10 miles per hour.
14. UAS's/Drones shall not be permitted to be operated when lightning is detected within 10 miles. The only acceptable UAS's/Drones to be operated on a Turner Construction project are those with:



- a) GPS, Radio Controlled (RC) transmitter and low battery fail safe are absolutely required. These must return the unit to its launching point if the GPS or RC Transmitter fail or the battery reaches 30% charge.
15. The operator must be at least 21 years of age and have obtained an UAS/Drone safe operator certificate. (*Presently the Unmanned Safety Institute has aeronautical and operator certification programs.*)
16. Only UAS's/Drones that are less than or equal to 10 pounds can be operated on a Turner Construction project.
17. Immediately prior to launch, the operator must verify with a Turner Construction representative that the remaining battery charger is greater than 95%.

III. Roles and Responsibilities

1. Permission to utilize UAS's/Drones by a third party on a Turner Construction project must be granted by the VP of Safety and National Legal Counsel.
2. The entire Turner Construction project staff must complete a course of UAS/Drone safety overview.
3. At least 48 hours prior to UAS/Drone use, Turner will notify *in writing* the property owner, architects/engineers and any other stakeholders of the intended plan for UAS/Drone use and safety precautions to be taken. Stakeholders may include residents in neighboring buildings that may have privacy concerns of a camera-mounted on a UAS/Drone.
4. Within 24 hours prior to flying a UAS, Turner will hold an all-hands safety meeting to discuss the operation with everyone on site. Discuss timing and location of UAS/Drone use, safety measures and precautions.
5. The operator must meet at a minimum FAA regulation Title 14 part 107, meet the qualifications from an accredited, experienced training organizations/agency, and have operated in a commercial capacity for at least 1 year. FAA regulations require that all commercial drone operators have a commercial pilot license. There is no exception to this and documentation must be submitted to Turner.
6. Appropriate type and limits of insurance must be obtained and approved by Susan Hughes.
7. Any incidents using drones that the operator has been involved in must be reported.

IV. Employee Safety

Superintendent/Safety Manager:

1. Hazards at the site are mitigated:
 - a. Wires/cables/utility lines/cranes identified and flagged or identified on flight plan



- b. Worker areas identified and flight plan adjusted to stay away from workers or workers reassigned to another area
 - c. If you have information that would be helpful to the drone operator please share that information. They will be coming into your project and it is up to you to control safety in the area.
 - d. Turner safety program for drones shared with the operator/company who operates the drone.
 - e. Turner visitor agreements signed by operator and orientation held.
 - f. Turner safety program reiterated to the operator, all PPE to be worn discussed, work rules discussed and signed off on.
 - g. Property in the vicinity that might be impacted is identified and communicated to the drone operator
 - h. Buffer zones established between aircraft and personnel;
 - i. Investigate potential alternative landing sites away from workers in case take-off/landing site is obstructed or compromised.
2. Weather considerations at the project must be taken into consideration: Project staff must verify:
- i. Temperature
 - ii. Visibility
 - iii. Precipitation
 - iv. Wind Speed
3. Notify any workers or nearby property owners of your intentions (permission) – Superintendent... but what is the communication plan
4. Discuss flight plan with subcontractors at superintendent meeting and workers the day of the flight
5. Emergency plan:
- a. Crisis management plan in place
 - b. First aid kit ready
 - c. Communication plan in place
6. Workers
- a. Situational Awareness:
 - At all times stay a minimum of 100' away from any unmanned aircraft (drone)
 - Act professionally when a drone is flying around. You are a representative of your company and your actions will be captured on the drone
 - Know at all times the location of the drone if you are in close proximity to the flight path.



- b. If at any time you feel that continuing to work is unsafe contact your superintendent and you will be reassigned to another area.
- c. If a drone lands in or around your work area contact the superintendent who will notify the operator as to the location. Please note that at no time will the drone be out of site of the operator.
- d. If a drone is flying on your project during your shift, identify safety measures on your pre task plan and discuss at your daily huddle
- e. Assure you understand emergency procedures and what to do if an emergency arises. Listen for signals (pre identified) and act according to the safety plan discussed in your daily huddle.
- f. Assure you have been debriefed by your superintendent and foreman of drone activity, the flight plan, times of flight, path of travel, and how it will affect your work area and activities.
- g. If you have information that would be helpful to the drone operator please share that information. They will be coming into your work area and it is up to you to control safety in the area.



Drone Use Approval Request Form

Business Unit:

Project name:

Date:

Requested by:

1. What is the duration of the project?
2. Where is the project located? (List any adjacent structures and their use, FAA flight path areas in close proximity to the project, location of the nearest airport, location of the nearest helipad and a general overview of the neighborhood) Provide a Google Map overhead map view of the project and surrounding structures.
3. What is the reason your project wants to utilize a drone?
4. Is there any other way to achieve the desired results without using a drone?
5. What is the purpose and scope of the request?
6. How often will the drone fly? And what is the frequency of each flight?
7. How long will this drone use activity continue? (Also provide dates from start to finish)
8. What will they be capturing?
9. Have the local rules, guidelines, and laws been researched and if so what are their restrictions?
10. What company (from the approved vendor list) will be employed?
11. What is the project plan for controlling and eliminating the risk (including privacy concerns)?

GM APPROVAL

Maria Vallelunga
Claims Manager

Stephen Spaulding II
Senior EH&S Director

Susan Hughes
Insurance Manager



Drone Vendor – Drone Specific Prequalification Questionnaire

Legal Name of Company: _____

Year Company Started: _____

Address: _____

Additional Address: _____

City _____ State _____ Zip _____

Person filling out this Questionnaire:

Name: _____

Title: _____

Email Address: _____

Work Phone: _____

Cell Phone: _____

Please respond completely to the questions below (attach supporting documentation if requested or to support your response):

1. Are all operators at least 21 years of age and have obtained an UAS/Drone safe operator certificate. *(Presently the Unmanned Safety Institute has aeronautical and operator certification programs.)?*
2. Do all operators meet the qualifications from an experienced training organizations/agency? *Note: All commercial drone operators must meet at a minimum FAA regulation Title 14 part 107, have a valid and current commercial pilot license, and have operated in a commercial capacity for at least one year with a minimum of 100 hours of flight time. There is no exception to this and documentation must be submitted to Turner.*

3. Please provide copies of insurance certificates that show the Turner required limits have been obtained:

Drone/UAV Liability:

- a. **Minimum Required Limits:** \$5,000,000 General Aggregate \$5,000,000 Each Occurrence for Bodily Injury/Property Damage
- b. **Required Terms and Conditions:** Turner Construction Company will be included as an additional insured.



4. Have you flown on a large construction site before? (Provide a list of projects, dates, and scope of work)
 - a. What challenges did you have?
 - b. How did you overcome them?
5. What companies have you worked with in the past? (Provide any references)
 - a. What is your largest project to date?
6. What equipment do you own?
7. What equipment do you expect to use on this project and why?
 - a. Please supply the last year of maintenance records.
 - b. Has this drone ever been involved in an accident or incident? If so, please explain the circumstances and what did you change about your safety program to assure it does not happen again.
8. Has your company ever been cited or fined for a violation associated with drone use? Y/N – if so please list circumstances, fine and outcome.
9. Do you have a site checklist you follow before each flight?
10. What software does your company utilize and how familiar are the pilots with the software? (PIX4D, Drone Deploy, other.)
11. Provide information to verify and assure Turner that the control connection between the pilot and the drone are done over a secure link to ensure someone else cannot take control of the drone
12. Provide information to verify and assure Turner that the link that streams video and/or still photos is done over a secure link?
13. Where are the video and still photos going to be stored?
 - a. Is it secure?
 - b. Who has access?
 - c. Does Turner own the data?
14. Submit a copy of your safety manual. As a minimum it must include:
 - a. Federal regulations pertaining to worker safety
 - b. Identification of pilot duties and responsibilities for planning, public protection, safety operation and maintenance of the UAS
 - c. Requirements for the PIC, visual observer and crewmember (including pilot) qualifications, certifications, and training
 - d. Processes and tasks that should be completed before, during and after UAS operations
 - e. Pilot responsibilities for inspection, maintenance and safe uses. Also what requirements are in place for pilot to review manufacturers operation, safety, and maintenance manual?
 - f. General public and worker protection methods during UAS operations
 - g. Privacy considerations and guidelines
 - h. Flight path considerations
 - i. Prohibitions that address non – business use of the UAS



- j. Other requirements that affect the safe use of the USA, such as the physical and mental conditions of the pilot
- k. Substance abuse testing program and when pilots and crewmembers are tested
- l. Expectations for conducting a preplanning and risk assessment meeting to review the risks and mitigation methods needed for safe use of the USA.
 - 1. Note: Preplanning should include at a minimum:
 - a. Responsibilities of the pilot and observers
 - b. Pilot and observer qualifications
 - c. UAS equipment specifications, software, and operating limitations
 - d. UAS preflight inspection and maintenance requirements
 - e. Clearance requirements for safety and privacy protection
 - f. Potential hazards to personnel involved in the UAS activities
 - g. Boundaries of the work zone and how to keep workers and the public safe and out of the work area
 - h. Training for workers who are not involved in the operations
 - i. Work area hazards such as power lines, other UAS, other aircraft, structures, or communication devices that could disrupt communication with the UAS flight path and if it necessitates the use of an observer (s)communication methods that will be used between the pilot and observer (s) and other backup methods when needed weather requirements, anticipated weather, and when to suspend operations
 - j. How to protect the public and surrounding structures from loss of control or power to the UAS.
 - k. Notification to all surrounding property owners
 - l. Emergency landing procedures and how to recover the UAS
 - m. Current federal, state, and local regulations on UAS use
 - n. Post flight review meeting to review UAS operation, lessons learned.

Scaffolds

I. Policy Statement

Each Contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart L – Scaffolds, in addition to the following guidelines.

II. Procedures

1. General Requirements

a) Capacity

- Scaffolds must be erected under the supervision of a competent person. The competent person shall be designated and submitted to Turner prior to the start of work.
- Scaffolds and their components must be able to support at least four times the maximum intended load.

b) Platform Construction

- Each working platform on a scaffold must be fully decked or planked. Planking must be sufficient to comply with any statutes or regulatory provisions in the applicable jurisdiction.
- Any gap in a working platform cannot exceed 1".
- All planks or platforms must be cleated or overlap a minimum of 6", but no more than 12".
- Wooden scaffold planks must not be painted.
- Scaffold components from different manufacturers may be intermixed as **long as they fit together without force** and scaffold integrity is maintained.

c) Supported Scaffolds

- Supported scaffolds with a height to base width ratio exceeding 3:1 must be stabilized from tipping by a solid connection such as guy wires, bracing, tying or other equivalent means.
- When scaffolds are erected adjacent to structures, they must be secured to the structure every 26' vertically and 30' horizontally.
- Scaffold poles, legs, posts, frames and uprights must be placed on base plates, mudsills or other adequate firm foundations.

d) Suspension Scaffolds

- Each suspension rope, including connecting hardware, used on adjustable or non-adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at either the rated load of the hoist.
- Counterweights must be made of non-flowable material. Sand, gravel, water or similar material may not be used.
- Counterweights must be secured to the outrigger beams by mechanical means to prevent accidental displacement.
- Outrigger beams that are not bolted to the structure must be secured by tiebacks. The tiebacks must be attached to a structural member of the building.

Standpipes, vents, conduit and other piping systems are not adequate structural members.

- Tiebacks shall be equivalent in strength to the suspension ropes
- Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, shall be capable of resisting at least 4 times the tipping moment imposed by the scaffold operating at the rated load of the hoist.

e) Scaffold Access

- Cross bracing must never be used as a means of access.
- Stair rail and handrail systems must be smooth surfaced so as to prevent lacerations or puncture wounds.
- A competent person must evaluate safe means of access during erection and dismantlement of the scaffold. Proper access shall be provided to each worker that is working on/off a scaffold.

f) Scaffold Use

- Scaffolds and scaffold components must never be loaded in excess of their maximum intended loads.
- Scaffolds and scaffold components shall not be left loaded with material overnight, unless the materials are secured. Materials shall not be left on suspended scaffolds overnight unless the scaffold is grounded.
- A competent person must inspect each scaffold before every shift and after any occurrence that may affect its structural integrity.
- The competent person will “tag” the scaffold “in service” or “out of service” prior to employee use.
- Scaffolds cannot be erected, moved, dismantled or altered except under the supervision of a competent person.
- Snow, ice and other slippery conditions must be eliminated before employees are allowed access to a scaffold.

g) Fall Prevention

- A Personal Fall Arrest System (PFAS) or guardrail system must be in place on all scaffolds exceeding 6’ in height. Mobile scaffolds require guardrails at 4 foot in height.
- Each employee on a single-point or two-point suspension scaffold must be protected by a PFAS and guardrail system, except boatswains’ chair which requires PFAS.
- The use of fall prevention devices are required during the erection or dismantling of a scaffold.
- When vertical lifelines are used, they must be protected from surface abrasion.
- When guardrails are used they must be 42” to 45” in height. Mid-rails must be half the distance from the top rail height to the platform deck. Toe boards should be constructed from 2”x4” material or equivalent and must met existing state or client requirements. “X” braces will not be an acceptable guard rail.

h) Falling Object Protection

- The area below a working scaffold must be barricaded to protect employees from a falling object hazard.



2. Requirements for Specific Scaffold Types

a) Tube and Coupler Scaffolds

- Tube and coupler scaffolds, in excess of 125', must be designed by a registered professional engineer (RPE).

b) Fabricated Frame Scaffolds

- Frames and panels must be braced by cross, horizontal or diagonal braces.
- Frames and panels must be joined together vertically by stacking pins or equivalent couplings.
- Frame scaffolds, in excess of 125", must be designed by an RPE.

c) Pump Jack Scaffolds

- Cannot be used on Turner projects unless approved by the BUEHSD.

d) Mobile Scaffolds

- Mobile scaffolds must be braced by cross, horizontal or diagonal braces based on manufacture's requirements to prevent racking during movement.
- Wheels must be locked when in use.
- Workers are not permitted to be on scaffold when it is being moved.
- Caster and wheel stems must be pinned to the scaffold legs or adjustment screws.
- The height to base width ratio on a mobile scaffold cannot exceed 2:1 unless it is braced with outrigger frames.
- Mobile Scaffolds require guardrails at 4 foot in height.

3. Scaffold Training Requirements

- ### a)
- Each employee that works on a scaffold must be trained by a qualified person in the recognition and avoidance of hazards associated with the type of scaffold they will be required to work from.

- ### b)
- Each employee that is involved in the erection, dismantling, moving, operating, repairing, maintaining or inspecting of a scaffold must be trained by a qualified person in the recognition and avoidance of hazards associated with these operations.



MEWP CHECKLIST

Name/Type of MEWP:				Contractor Name			
Model or Equip No.:				Contact Number			
Operator or Inspectors Name: (person performing the inspections)							
Date:		/	/	/	/	/	/
Shift:							
Is the operator trained to operate this MEWP and does the operator have a valid operator's license/card?		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
Inspection Item & Description Pass Fail Status		P/F	P/F	P/F	P/F	P/F	P/F
1	Operating and emergency controls are in proper working condition, EMO button or Emergency Stop Device						
2	Upper drive controls interlock mechanism is functional (i.e. foot pedal, spring lock, or two hand controls;)						
3	Emergency Lowering function operates properly						
4	Lower operating controls successfully override the upper controls						
5	Both upper and lower controls are adequately protected from inadvertent operation.						
6	Control panel is clean & all buttons/switches are clearly visible (no paint over spray, etc.)						
7	All switch & mechanical guards are in good condition and properly installed						
8	All Safety Indicator lights work						



9	Drive controls function properly & accurately labeled (up, down, right, left, forward, back)							
10	Motion alarms are functional							
11	Safety decals are in place and readable							
12	All guard rails are sound and in place, including basket chains							
13	Work platform & extension slides are clean, dry, & clear of debris							
14	Work platform extension slides in and out freely with safety locking pins in place to lock setting on models with extension platforms.							
15	Inspect for defects such as cracked welds ,fuel leaks, hydraulic leaks, damaged control cables or wire harness, etc.							
16	Tires and wheels are in good condition, with adequate air pressure if pneumatic							
17	Braking devices are operating properly							
18	The manufacturer's operations manual is stored on MEWP (in all languages of the operators)							



Aerial Lifts and Enhanced Safety Procedures for High-Lift Work

I. Purpose and Background

This policy directive is intended to mitigate risks related to elevated work. It reflects current evidence – and experience based safety enhancements for the use of lifts, and requires control guards for all lifts brought onto Turner sites, timely retro-fitting of lifts already on site to add control guards, and enhanced procedures for work at 30' or above in lifts.

The Policy directive addresses the following hazards and risks:

- A. Inadequate guards over controls which can lead to inadvertent operation of the lift
- B. Risk of crush injuries or entrapment in the ceiling
- C. Risk of accidental over-extension and lift tip-over
- D. Inability to rescue

The enhancements to our lift safety policy grew out of a collaboration between Turner and the industry's top scissor lift manufacturers (JLG, Skyjack, and Genie) and purveyors (United, Herc, and Sunbelt). They reflect our unwavering commitment to continuously evaluating and improving our safety program in order to provide the safest possible work environment for our people.

We know that no safety device can prevent an accident in all circumstances. But, with enhancements and modifications to lift controls, Turner is taking an important step to protect workers against known and preventable hazards.

II. The Policy

All scissor lifts and boom lifts shall have an approved shroud or guard over the joy stick/controls, or a timeout feature on the lift/lower and drive selector, which disables the lift/lower and drive functions after several seconds of inactivity. Moreover, boom lifts must be delivered with anti-crush or secondary-guard technology.

Note: Along with the scissor lift and boom lifts policy change, enhanced safety procedures for Mobile Elevated Work Platforms used in High Lift Situations have been developed and incorporated into the policy.

III. Implementing the Policy: Who is Responsible?

Procurement

All Bare Rental Agreements shall reflect Turner's updated policy regarding additional control guards for the safe use of scissor lifts, mobile elevated work platforms, and boom lifts.

Safety and Operations Leaders

Ensure that our people are aware of the policy and that they understand their responsibilities as outlined therein.

Site Safety and Field Staff

Conduct a thorough review of all active lifts to determine which must be retrofitted and work with subcontractors and rental companies to complete the necessary modifications as soon as possible. Verify that all lifts brought on site meet the safety requirements of the policy.

1. Mobile Elevated Work Platform (MEWP)



- a) All scissor lifts and boom lifts shall have an approved (see below) shroud or guard over the joy stick/controls, or a timeout feature on the lift/lower and drive selector, which disables the lift/lower and drive functions after several seconds of inactivity. Moreover, boom lifts must be delivered with anti-crush or secondary-guard technology.
- b) Any lift currently on a Turner project without an approved shroud or guard over the joy stick/controls must be retrofitted as quickly as possible but not later than the end of 2017.
- c) All Bare Rental Agreements shall reflect Turner's updated policy regarding additional control guards for the safe use of scissor lifts, mobile elevated work platforms, and boom lifts.
- d) Prior to mobilizing, all Mobile Elevated Work Platforms (MEWP) must be inspected to ensure compliance with Turner requirements. MEWP's (scissor lifts, aerial boom lifts, and knuckle booms) must have dual action controls to be approved for use.
- e) Dual action controls require that there be two separate actions to activate the lift. If a MEWP arrives on site and does not have dual action controls, then it must remain inoperable until a Dual action control is installed. The dual action control may consist of a button that must be depressed in order for the controls to operate, or a toggle switch that must be activated prior to operating the MEWP controls (The toggle switch must automatically return to the center when released).
- f) The contractor is required to complete a daily inspection sheet for all powered lift trucks and mobile elevated work platforms. The inspection includes operational and physical parameters for operation of the equipment being inspected. The inspection form must be posted in a visible location during operations and a copy made available to Turner upon request. An inspection form is available from Turner. Field modifications are not allowed on aerial lifts.
- g) Only authorized and trained individuals may operate aerial lifts.
- h) When a lift is delivered to the project, the rental company or the owner of the lift shall inspect the lift & provide documentation the lift is safe to operate onsite. The lift shall be free from any physical defects in new or like new condition with all the safety placards present. The operator's manual and inspection documentation shall be included.
- i) Employees must use personal fall arrest systems (PFAS) when working from boom platforms. Employees shall follow the manufacturer's recommendations for the type of (PFAS) when working from an aerial lift.
- j) At a minimum, employees shall follow the manufacturer's recommendations for the type of fall arrest/restraint when working from a scissors lift. If scissor lifts are equipped with an attachment point provided by the manufacturer for a restraint system, they are to be used. The intent of this protection is to keep workers within the confines of the passive protective system (rails) so the shortest length of lanyard that allows the task to be completed and keep the worker confined to the walking/working surface is required. Note: These attachment points are not designed as fall protection anchorages. Never climb above the work platform. A dedicated spotter is required any time a scissor lift must be moved in an elevated state. The lift shall be inspected daily & documentation provided to Turner upon request. Each worker operating the lift shall have a training card or documented training.
- k) Employees must keep both feet on the floor of the basket and not stand on the railing or toe board during operation.
- l) If it has been determined by the subcontractor's competent person that there are no feasible means to access an area without leaving the basket of a scissor lift, a modified Pre-Task Plan must be completed as well as a Fall Protection Plan. This plan must be completed by the competent person with details of the anchorage point outside the scissor lift and above the employee's head. Any worker engaged in the activity should be active in the preplanning of the modified plan. All workers involved must review and sign off on the plan. This must



- be reviewed with Turner's Superintendent. Each work activity and area will require their own PTP and Fall Protection Plan.
- m) If operating in congested areas, MEWP's will require spotters. The spotters will be responsible for ensuring that the area around the MEWP and the travel path are free of obstruction and clear of equipment and personnel.
 - n) Man baskets such as those utilized from fork truck type vehicles are not allowed on Turner projects.
2. Mobile Elevated Work Platform Use in High Lift Situations (applies to boom lifts with an operating platform height of 30' and above) A dedicated JHA shall be developed for each activity operating a MEWP above 30'.
- a) MEWP's often operate in close proximity to each other and workers may walk through or work close to their operation. A system for managing the affected area below the basket and movement of the MEWP's is necessary to decrease the risk of struck-by hazards.
 - b) If any of the workers in the Aerial Boom Lifts are incapacitated and incapable of descending, a rescue may be required. Due to the nature of this type of work, it is prudent to establish an emergency response plan which has redundancy built into it.
 - c) Boom lifts cannot be operated by the basket controls without first depressing a covered, protected foot switch. This causes the operator to be intentional about basket movement and reduces the risk of incidental operations.
 - d) The lifts should have a pressure actuated auto shut-off across the controls which shuts down the equipment to prevent entrapment.
 - e) A dedicated ground spotter (with no other collateral duties) shall be in place whose duties are as follows:
 - i. Visually verify and communicate via two-way radio that all obstructions are clear of the path of travel at the ground level.
 - ii. Visually verify that all obstructions are clear while basket is moving.
 - iii. The ground spotter shall be responsible for no more than 1 Controlled Access Zone (CAZ). Additional spotters will be required if MEWP's will need to be operated/relocated simultaneously within 1 CAZ (Approximate size and dimension of CAZ is below).
 - iv. Spotter Logistics:
 - a. If 2 or more lifts are required to operate simultaneously, each operator/spotter team will utilize their own dedicated radio channel.
 - b. The Spotter shall not use a cell phone, head phones or other devices which may distract them from their duties.
 - c. The Spotter shall have stop work authority.
 - d. The spotter shall wear, at a minimum, a Class II High Visibility Vest.
 - e. The Spotter/operator team shall perform a "radio" check prior to the commencement of the activity and every 30 minutes thereafter if no communications occur during that time frame.
 - f. Operation of MEWP from the basket is prohibited without prior communication with the spotter and an "All Clear" is given.
 - f) Other Traffic at base of operating MEWP
 - a. A Controlled Access Zone will be established in the affected areas of the MEWP operation to include the base and working zone beneath the platform. The CAZ should be constructed with physical barriers such cable, wire rope or chain, or flagging. Danger tape and Caution tape should be the last choice and spray-painted lines will not be accepted. The CAZ must be secured from



- tipping and signed every 30'. The size of the CAZ must consider deflection or arc of the falling material. Each CAZ will be adequately sized to have a 15-foot buffer zone on each side of the MEWP to include under the platform. Each CAZ will hold no more than 3 boom lifts.
- b. No other equipment or vehicle will be allowed to operate within a dedicated CAZ.
 - c. A 30' Wide dedicated path of travel for vehicles and other equipment shall be established using rope, traffic cones, delineators or other clear markings which safely guide other equipment and vehicles around the MEWP CAZ. Any changes in the path of travel must be approved by the Turner Superintendent. Boom lifts shall not operate within or over the traffic zone.
 - d. The Spotter shall monitor vehicle traffic and shall have authority to stop work and or vehicle traffic.
- g) Emergency Response;
- a. There shall be, at a minimum, (2) two MEWP's on site when working in excess of 85 vertical feet. This is to ensure that one could assist another which has the capability to reach the basket in the event of an emergency. (A typical FD ladder truck can reach 85'-90' vertical feet)
 - i. Exceptions
 - 1. There is a means of safely reaching the platform via catwalk or other elevated surface.
 - 2. There is a means to reach the platform from above via rope, slings or other climbing type equipment. This equipment is only to be used by trained professionals.
 - b. The Spotter shall be trained on how to safely use the ground controls. The ground controls shall be tested prior to work occurring each day and/or shift
 - c. The Local Fire Department Shall be invited to the project site to review conditions and site activities which may have the potential for a "Vertical Rescue" in the event of an emergency.
 - d. The emergency response number shall be conspicuously posted.
 - e. Turner, the Fire Department and Dispatch shall determine a key phrase or word which indicates that a "Vertical Rescue Team" is required. (These teams have specialized training and equipment to respond to high rescue conditions.)
 - f. Pre-lift inspections are to include the review of available fall protection equipment and access to and the condition of anchor points.
 - g. Workers on the ground shall stay out of the CAZ and communicate with the spotter if entrance is needed.
 - h. A Stop Work must immediately be called when any deviations are observed with fall protection.
- h) Address line of fire hazards by following these work practices:
- a. Identify and discuss task which have the potential for falling tools, materials and/or debris.
 - b. Workers should avoid positioning themselves, and their equipment, in a line of fire where they could be struck by falling, flying or moving objects from the overhead platform.
 - c. Utilize tag lines to maintain positive control of objects being removed or hoisted to ensure the object does not come in contact with the lift.

Turner

Engineering & Technology
Aerial Lifts

IV. Approved Guards and Shrouds for Lift Controls

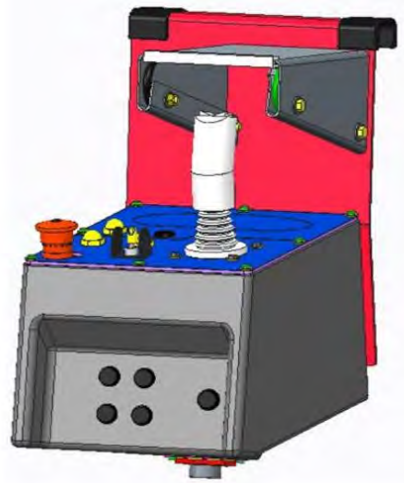
Please see below for examples of approved guards and shrouds for lift controls on Turner projects.

Note: In addition to joystick guard/shrouds, clear messages, proportional lift and drive controls, and symbol-based function selection buttons are required for easy training and operation of lifts.

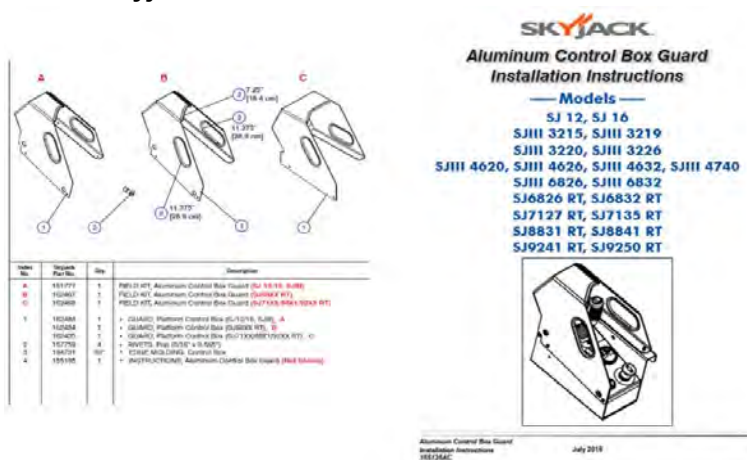
JLG Scissor Lift Guard



JLG All-Terrain

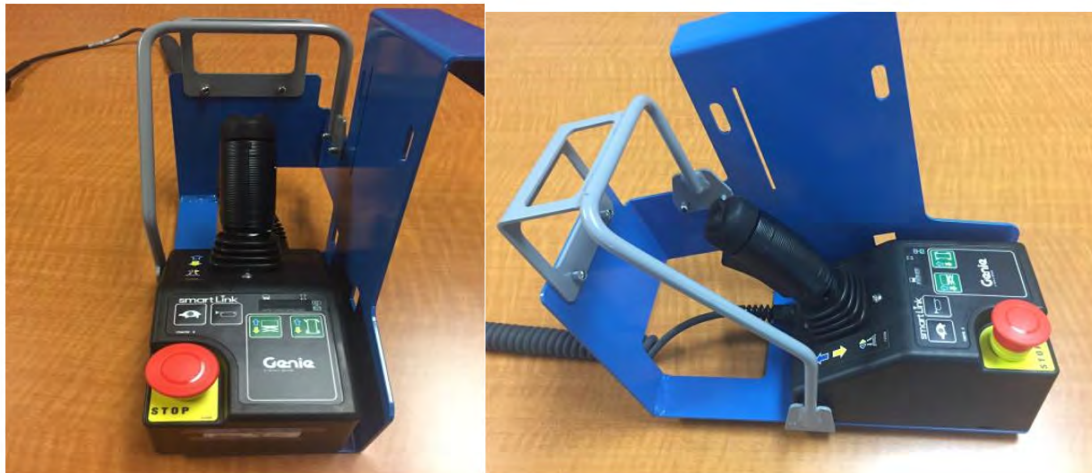


- **Skyjack Scissor Lift**



- **Genie Scissor Lifts**

The Genie SmartLink control scissor for slab scissors must include a platform control, ground control, and joystick cover as shown below.



4. Aerial Lift Training Requirements

Only trained and authorized persons are allowed to operate an aerial lift. Training should include:

- a) Explanations of electrical, fall and falling object hazards;
- b) Procedures for dealing with hazards;
- c) Recognizing and avoiding unsafe conditions in the work setting;
- d) Instructions for correct operation of the lift (including maximum intended load and load capacity);
- e) Demonstrations of the skills and knowledge needed to operate an aerial lift before operating it on the job;
- f) When and how to perform inspections; and
- g) Manufacturer's requirements



Signs, Signals and Barricades

I. Policy Statement

All employees of the Turner Construction Company and its subcontractors will comply with 29 CFR 1926, Construction Industry Regulations, Subpart G, Signs, Signals and Barricades, at a minimum, in addition to the following.

II. Procedures

1. Required signs will comply with the OSHA standards described in 1926.200.
2. Where areas may require additional awareness or present unique danger, the use of warning tape may be necessary.
 - a) The warning tape should have a sign with the nature of the hazard, the contractor who installed the tape with a contact number, and the duration the tape will be in place.
 - b) The intent of the warning tape is to notify of hazards that may arise during construction activities. Every effort should be made to correct these situations with permanent solutions in a timely fashion. See appendix L
3. All flagmen shall be trained on appropriate procedures before controlling traffic, as required by the Manual on Uniform Traffic Control Devices (MUTCD) and any Municipal or State guidelines.
4. All flagmen shall utilize sign paddles and shall be outfitted with high visibility garments, as required by current ANSI standards. All PPE and traffic control equipment shall be outfitted with reflectorized material for night work as required by current ANSI standards.
5. All crane and hoist signals shall comply with applicable ANSI standards.
6. All traffic control devices shall comply with the MUTCD and any applicable Municipal or State guidelines.
7. Emergency communication signage / egress route signage should be posted on floors that include the locations of exits, stairs, fire extinguishers, gates, etc.



Stairways and Ladders

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart X – Stairways and Ladders, in addition to the following guidelines.

II. Procedures

1. General Requirements

- a) A stairway must be provided at all personnel points of access where there is a break in elevation of 18" or more.
- b) Scaffold type stair towers or prefabricated stairs shall be utilized instead of job built ladders.

2. Stairways

- a) When doors from an office or storage trailer open directly onto a stairway, a platform must be provided and the swing of the door must allow an additional 20" to prevent the door from striking an employee.
- b) Employees are not allowed to use metal pan stairs unless they have been fitted with wooden filler blocks or poured with concrete.
- c) Stairways with four or more risers or rising more than 30", whichever is less, must have a stair rail or handrail along each unprotected side or edge.
- d) Handrails that will not be a permanent part of the structure being built shall have a minimum clearance of 3 inches between the handrail and walls, stair rail systems, and other objects. 2x4 blocks are acceptable for spacers.
- e) The stair rails are to free of nails & hazardous projections.

III. Ladders Last Policy Statement

1. Ladder use on Turner Construction projects will be allowed only when it has been determined that it is unfeasible to use all other options to complete the task.
2. If it is determined that a ladder is the only means of performing the job at elevated height, a ladder permit must be submitted prior to starting work. At no time will a ladder be on site without a current permit and safety checklist.
3. For repetitive work, allow for the use of a "multi-day" permit to be issued in lieu of a daily permit. Daily inspections would still occur but the permit/tag would be modified.
4. Use of job built ladders is prohibited on Turner Construction Projects. Temporary stair towers or prefabricated stairs shall be used to access different building levels.

IV. Procedures for identifying and responding to all tasks that require the use of a device that allows work from height:

1. Prior to beginning work, the subcontractor or superintendent (for self-perform work) shall evaluate all tasks that require individuals to work at elevated heights. It is the expectation that these tasks



will be performed using methods other than a ladder. Use of lifts and portable scaffold devices shall be the preferred method to perform this type of work.

2. If it is determined that a ladder must be used:

- a. The subcontractor shall complete the Turner Construction Ladder Use Permit and have it reviewed and approved by the Turner Superintendent.
- b. When working at a height greater than four (4) feet, 100% fall protection is required. A retractable is the only option in this case.
- c. Prior to starting work each shift, The **Turner Construction Ladder Safety Inspection Checklist** shall be completed affixed to all ladders.
- d. **Prior to using a ladder, the Turner Superintendent will review the Job Hazard Analysis, Pre Task Plan, and Ladder Use Permit.**
- e. Only fiberglass ladders are to be utilized. Metal and wood ladders will not be used on Turner projects. Platform ladders shall be the ladder of choice on Turner Construction projects.
- a. At a minimum, only Type IA Heavy Duty (300 lb. limit) ladders may be used on Turner projects.
- b. When employees ascend or descend a ladder, they must maintain a three-point contact and not carry anything that could cause them to lose their balance.
- c. Pull ropes should be placed at all access ladders so employees can safely lift tools or equipment to upper levels.
- d. Stepladders must be opened fully and set level when in use.
- e. When extension ladders are used to access upper landings, the side rails must extend at least 3 feet above the landing and secured at the top.
- f. All ladders must be used for the purpose for which they were designed.
- g. The base of an extension and or straight ladder is to be placed 1 foot horizontal from the face of the surface for every 4 feet vertical.
- h. The area around all ladders must be checked to ensure there are no slippery or uneven conditions or debris in the area before placing the ladder for use. All weight limits must be checked to avoid exceeding the manufacturer's limits.
- i. Weight limits must also be checked to avoid exceedances.

4. Training

- a) Each employee involved in ladder use must be trained by a competent person in the recognition and avoidance of stair hazards.



Steel Erection

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart R – Steel Erection, in addition to the following.

II. Procedures

1. General Site, Erection and Construction Sequence Requirements

- a) Before authorizing the commencement of steel erection, the controlling contractor shall ensure that the steel erector is provided with the following written notification: the concrete in the footings, piers and walls and the mortar in masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.
- b) The controlling contractor must ensure that site access roads and storage areas are adequate for the safe delivery and movement of cranes, trucks and other equipment necessary to erect steel. The equipment must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met.
- c) A site-specific erection plan must be developed by a qualified person and submitted to Turner prior to the start of work.
- d) A site-specific fall prevention plan must be developed, submitted to Turner and administered by a competent person prior to the start of work. The plan must include Job Hazard Analysis' (JHA's) and Pre-Task Planning (PTP) meetings.
- e) The controlling contractor must ensure that state and municipal permitting issues are addressed when off-loading steel and /or materials on public roads.

2. Hoisting and Rigging

- a) Cranes being used in steel erection must be visually inspected by a competent person prior to each shift.
- b) Individuals who rig loads must be qualified. An employer may not permit an individual to rig loads to be lifted by a crane unless the individual has received training and also has the experience appropriate to their level of work.
- c) Outrigger pads should be at least 3 times the dimension of the crane float. The outrigger pads are to be pre-manufactured.
- d) A qualified rigger must inspect all rigging prior to each use. The qualification of the qualified person must be submitted to Turner for review prior to the start of work.



- e) Routes for suspended loads must be pre-planned to ensure that no employee is required to work directly below a load, unless they are engaged in the connection of the steel.
- f) Multiple lift rigging may be performed when the following conditions are met:
 - A multiple lift rigging assembly is used.
 - A maximum of **(3) three members** are hoisted per lift.
 - Only beams or similar structural members are lifted.
 - All employees engaged in the activity have been trained in the specific procedures identified in OSHA Subpart R, 1926.761.
- g) See the Cranes and Derricks in Construction and the Material Handling and Rigging section for additional information.

3. Structural Steel Assembly

- a) There should never be more than four floors or 48', whichever is less, of unfinished bolting or welding above the foundation or permanently secured floor. An exception would be if the structural integrity were maintained as a result of the design.
- b) A fully planked or decked floor or nets must be maintained within two stories or 30', whichever is less, directly below where erection work is being performed.
- c) Shear connectors, also known as "Nelson studs", must not be attached to the top of the beam until after the decking has been installed.
- d) Metal decking shall be laid tightly and immediately secured upon placement to prevent accidental movement or displacement.
- e) At the end of each shift, unbundled metal decking shall be secured in place.

4. Beams and Column Anchorage

- a) All columns must be anchored by a minimum of 4 anchor bolts.
- b) All columns must be evaluated by a competent person to determine whether guying or bracing is necessary.
- c) During the placing of structural beams, the load must not be released until a minimum of two bolts, per connection, are secured in place.
- d) Employees connecting horizontal members shall not use the members as an anchorage point unless they have been secured at two points independent of an active hoist line. (i.e. they shall not walk out onto a member that is only connected on one side and is still attached to the crane).
- e) Anchor bolts shall not be repaired, replaced or field modified without the approval of the project structural engineer of record.



- f) Prior to the erection of a column, the controlling contractor shall provide written notification to the steel erector if there has been any repair, replacement or modification of the anchor bolts of that column.
5. Personal Fall and Falling Object Prevention
- a) All material, equipment and tools must be secured against accidental displacement while aloft.
 - b) Each employee engaged in a steel erection activity that is on a walking or working surface with an unprotected side or edge 6' or more above a lower level, must be protected from fall hazards by safety net systems, guardrail systems or personal fall arrest systems. Turner Construction has a 100% Fall Protection ZERO TOLERANCE POLICY. AT NO TIME SHALL ANYONE BE AT A HEIGHT > 6' WITHOUT BEING PROTECTED. This includes connectors and any employee installing metal decking.
 - c) During metal decking installations only self-retracting lanyards approved by the manufacturer for leading edge work shall be used.
6. Training
- a) All training must be provided by a qualified person, knowledgeable in the recognition and avoidance of hazards associated with steel erection.
 - b) Training includes, but is not limited to; fall hazards, multiple lift rigging and steel connection.



Underground Construction, Caissons, Cofferdams and Compressed Air

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations, Subpart S – Underground Construction, Caissons, Cofferdams and Compressed Air, in addition to the following guidelines.

II. Procedures

1. The employer must control access to all openings to prevent unauthorized entry underground. Unused chutes, man ways, or other openings must be tightly covered, bulk headed, or fenced off and must be posted with warning signs stating "Keep Out", or similar in the appropriate languages.
2. The employer must designate in writing the competent person responsible for monitoring the air quality during underground construction.
3. The atmosphere in all underground work must be tested as often as necessary to assure that the atmosphere contains at least 19.5% oxygen, but no more than 23.5% oxygen. Continuous monitoring is recommended. These tests must be conducted before testing for air contaminants.
4. The atmosphere in all underground work must also be tested quantitatively for hazardous materials such as carbon monoxide, nitrogen dioxide, hydrogen sulfide, and other toxic gases, dusts, vapors, mists and fumes.
5. If an IDLH (Immediately Dangerous to Life and Health) atmosphere is present, the caisson then becomes a permit required confined space and Turner's Confined Space Entry Procedure is implemented.
6. The competent person must keep a daily record of all air quality test results and submit those results to Turner, on a weekly basis and/or upon request.
7. The full depth of the shaft must be supported by casing or bracing.
8. The casing or bracing must extend 42" to 45" above ground level.
9. This height may be reduced to 12", provided a standard railing is installed, the ground surrounding the shaft is sloped away from the shaft and effective barriers are in place to prevent mobile equipment from jumping over the 12" barrier.



Welding and Cutting

I. Policy Statement

Each contractor working on a Turner project must comply with 29 CFR 1926, Construction Industry Regulations, Subpart J – Welding and Cutting, in addition to the following guidelines.

II. Procedure

1. Gas Welding and Cutting

a) Transporting, Moving and Storing Compressed Gas Cylinders

- Valve protection caps must be in place and secured.
- Cylinders must be moved by gently tilting and rolling them on their bottom edges.
- When cylinders are hoisted by cranes, or other mechanical means, magnets or choker slings must not be used.
- When cylinders are moved by powered vehicles, they must be secured in a vertical position to the vehicles by a metal bracket designed for this purpose.
- A suitable steadying device must be in place to keep cylinders in a vertical position when in use.
- Damaged or defective cylinders must be taken out of service immediately.
- Oxygen cylinders in storage must be separated from fuel gas cylinders by a minimum distance of 20'. A secondary option is to separate the cylinders using a non-combustible barrier at least 5' high that has a fire rating of 30 minutes. All torch carts are required to have a fire rated barrier between the cylinders.

b) Placing Cylinders

- Cylinders must be kept far enough away from the actual welding or cutting operation so that slag, sparks or flame will not reach them.
- Cylinders containing oxygen, acetylene or other fuel gas must not be taken into confined spaces.

d) Use of Fuel Gas

- The employer must instruct the employee in the safe use of fuel gas.
- Before a regulator is connected to a cylinder valve, the valve must be opened slightly and closed immediately. This "cracking" of the valve must be done each time before a regulator is connected.
- Flashback arrestors must be installed at the torch head and at the regulators and used according to manufacturer's recommendations. Under these circumstances, the arrestors are designed to stop the backflow (reverse flow) of unwanted gas and/or flashback into the upstream equipment.
- Flashback arrestors must be routinely inspected, per manufacturer's recommendations.
- All hoses must be routinely inspected, per manufacturer's recommendations. Specific issues include cracking and dry rot.

e) Regulators and Gauges

- Oxygen and fuel gas pressure regulators must be in proper working order, per manufacturer's recommendations, while in use.
- The regulators & gauges must be removed from the cylinders at the end of each shift.



2. Arc Welding and Cutting

a) Manual Electrode Holders

- Only manual electrode holders designed for arc welding and cutting, and are capable of handling the maximum current, can be used.
- Any and all current carrying parts of the holder must be fully insulated.
- When welding is not taking place, the rod cannot be left in the stinger.

b) Welding Cables and Connectors

- All arc welding and cutting cables must be completely insulated, flexible and capable of handling the maximum current necessary to complete the work.
- The cables must be free from splices or repair, a minimum distance of 10', from the cable end to the electrode holder.
- Cables in need of repair, beyond the distance noted above, can be repaired using friction or rubber tape, per manufacturer's recommendations.

c) Machine Grounding

- The ground return cable must have a current carrying capacity equal to or greater than the maximum specified output of the arc welding or cutting unit.
- When a single ground is used to service several machines, the current carrying capacity must be equal to or greater than the total maximum specified output of all the machines which it services.

d) Shielding

- All arc welding and cutting operations must be shielded by non-combustible or flameproof screens, which protect employees and other persons working in the area from the direct rays of the arc.

3. Fire Prevention

- a) When practical, the object to be welded, cut or heated should be moved to a designated safe location, away from flammable liquids and other combustibles.
- b) If the object cannot be moved, positive means must be taken to confine the heat, sparks and slag.
- c) A 20 lb., ABC dry chemical extinguisher or equivalent must be immediately available in the work area and must be maintained in a state of readiness for instant use.
- d) Drums, containers or hollow structures, which have contained toxic or flammable substances, must be filled with water and thoroughly cleaned, ventilated and tested before welding or cutting on them.
- e) Hot Work Permits must be used and are valid for one shift only.
- f) A fire watch must be maintained at least 30 minutes (60 minutes-depending on client expectations) after the hot work completion.



HOT WORK PERMIT

1. **DO NOT CONDUCT HOT WORK** if fire protection is not available.
2. This Hot Work Permit is required for any operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, thawing pipe, torch-applied roofing and welding.
3. Foreman for hot work operation shall complete this form prior to commencement of the hot work. Employee performing hot work shall review this form and display in the area where work is being done.
4. Return form to Turner at the end of the shift.

Permit Holder / Contractor: _____ Date: ____ / ____ / ____

Foreman (Name): _____

Location (building, floor, room): _____

Devices Disabled: _____

Type of Job: _____

Time Started: _____ AM PM Time Finished: _____ AM PM

Permit Expires: (1 shift or 8-hour period) Date: ____ / ____ / ____ Time: _____ AM PM

Prior to beginning any hot work, all potential hazards must be addressed including:

Yes No N/A

- | | | | |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Life Safety Department has been contacted for any work that will or may impair life safety systems.
What will be impaired (circle): Sprinkler heads, detectors, other _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Available sprinklers, hoses and extinguishers are in service and in good repair. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Fire extinguishers are available at the point of hot work. (Supplied by the Permit Holder) |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Work equipment is in good repair. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Worker has all appropriate safety equipment for the hot work (e.g. gloves, shield, respirator etc.)
and not defective. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | All movable fire hazards in the vicinity have been relocated at a safe distance (at least 35 ft.) from
the point of operation or covered with fire resistive barriers if unable to move. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | All wall and floor openings have been covered. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | When working on or near walls, move combustibles away from both sides of walls. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | When working with suspended ceilings, be sure to protect concealed spaces. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Floors have been swept clean of combustibles. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Flammable liquids, dust, lint, and oily deposits have been removed. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The area has been examined to determine if flammable or combustible liquids or vapors could
potentially be present. If present, the atmosphere shall be tested using an explosive meter. If
quantities are 10% of the lower explosive limit or greater, hot work shall not be performed. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | A fire watch is equipped with an appropriate fully charged fire extinguisher and present during hot
work operations. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | A fire watch will be provided for 30 minutes following the completion of work, including breaks. |

Final Work Area Check:

Work area monitored following Hot Work and 30 minute fire watch and found safe: Yes / No

Name of Fire Watch (Please Print): _____ Time Started: _____ AM PM

Craft Person Conducting Task: _____

Turner Representative: _____

Devices Reactivated: _____



Section

4

TURNER RISK MANAGEMENT CORPORATE ENVIRONMENTAL, HEALTH AND SAFETY POLICY

Occupational Health



Blood-borne Pathogen Prevention Policy

I. Policy Statement

This program will apply to all Turner employees who could be "reasonable anticipated", as a result of performing their job duties, to come in contact with blood and other potentially infectious bodily fluids. Turner employees trained and certified in first aid and CPR who might be "reasonable anticipated" to come in contact with bodily fluids also must follow the rules and regulations set forth in this program.

II. Procedures

1. When dealing with blood or other bodily fluids, Turner employees are required to follow Universal Precautions. Accordingly, all human blood and other human body fluids are treated as if known to be infectious for HIV, Hepatitis B, and other blood-borne pathogens.
2. All jobsite and business unit offices are required to provide employees with disposable latex gloves and one-way resuscitation masks.
3. All certified first aid providers are required to wear disposable latex gloves and eye protection while performing first aid on an injured individual. If rescue breathing or CPR is performed, a one-way resuscitation mask shall be provided for the protection of the injured and the provider.
4. All blood spills shall be immediately contained and cleaned with an anti-viral solution, or by a solution of 5:1 water to bleach. In the event of a serious accident, Turner should consider contracting with an outside Hazmat firm.
5. Any material saturated with blood must be considered regulated waste. This means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; and items that are caked with dried blood or other potentially infectious materials. Discarded Band-Aids and gauze containing small amounts of blood products are not considered regulated waste. Disposal of all regulated waste shall be the responsibility of emergency medical personnel.

At least one Turner jobsite person shall be trained in First Aid, CPR, AED procedures and shall be trained in the decontamination of blood spills (Universal Precautions). All individuals are encouraged to attend training in emergency first aid procedures at each jobsite. At all times every project will have on site a FA/CPR/AED trained representative from Turner Construction and each subcontractor. Best Practice for each Turner representative to be trained in First Aid, CPR, AED procedures and shall be trained in the decontamination of blood spills (Universal Precautions).



Carbon Monoxide Exposure Prevention

I. Policy Statement

The purpose of this policy is to educate Turner employees and their subcontractors on the hazards associated with carbon monoxide exposure. Carbon monoxide is a highly-toxic, flammable, non-irritating, tasteless, colorless, odorless gas that is slightly lighter than air. Carbon Monoxide (CO) interferes with the oxygen-carrying capacity of blood. CO is non-irritating and can overcome persons without warning. Many people die from CO poisoning, usually while using gasoline powered tools and generators in buildings or semi-enclosed spaces without adequate ventilation. Some of the common symptoms of carbon monoxide poisoning are shortness of breath, headache, dizziness, muscular weakness and nausea. ALL fossil fuel (gasoline, diesel, propane, acetylene, etc.) burning equipment, when used where people are working in confined areas, produces carbon monoxide poisoning exposures.

II. Procedures

1. Testing Requirements - Use of any device that discharges the products of combustion into a work area where an employee exposure is possible, requires testing as defined below:
 - a) Monitor the work area to determine the concentration of carbon monoxide at least three times during each 8-hour period. Monitoring shall be conducted with a UL approved monitoring device, such as a LEL/O₂/H₂S/CO 4-gas monitor.
 - b) Monitor several different points within the area at the working/breathing heights of an employee.
 - c) Maintain a record of these tests noting the date, time and result of each test. Provide the monitoring results to all affected employees within the work area, if requested. Once the project is complete, these records must be archived with Business Unit Environmental, Health, and Safety Director.
 - d) Remove the employees from the area when the concentration of carbon monoxide reaches 20 PPM. Supplemental ventilation and reduction or elimination of the source shall be provided to reduce the concentration below 20 PPM before the employees are allowed to resume work in the area.
 - e) Continuous monitoring required when the concentration of carbon monoxide reaches a steady concentration of greater than 20 PPM in ambient air.
2. Use of Solid Fuel Salamanders - solid fuel salamanders are prohibited within buildings and on scaffolds.
 - a) OSHA has interpreted that this rule was adopted to prevent fires and carbon monoxide hazards associated with the burning of spark-producing fuels (wood and paper) in open salamanders, and was not intended to apply to properly constructed and equipped solid fuel (coke and coal) salamanders used in structures under construction. The use of solid fuel salamanders (heating units with combustion exhausting into the surrounding enclosed atmosphere) are only allowed in open spaced areas.

III. Roles and Responsibilities



1. Turner Management:
 - a) Conduct inspections of the workplace for compliance with this policy.
 - b) Discuss policy applications during project orientations and pre-plan meetings with subcontractors.
 - c) Conduct pre-planning meetings and require the use of Job Hazard Analysis (JHA) and Pre-Task Planning (PTP) meetings.
2. Subcontractor Management:
 - a) Comply with and furnish materials necessary to meet the requirements of Turner policy.
 - b) Attend and participate in any and all project orientations, pre-plan meetings, JHA discussions and PTP meetings.
3. Subcontractor Employees:
 - a) Attend and participate in any and all project orientations, pre-plan meetings, JHA discussions and PTP meetings.
 - b) Will comply with this policy.

IV. Internal Combustion Engine Equipment

Prevent CO exposure by using tools or vehicles powered by electricity or compressed air. Utilize engineering controls including exhaust scrubbers on equipment and the use of non CO type equipment. Never use equipment, vehicles, or machinery with internal combustion engines such as generators, cars, trucks, etc. indoors or in enclosed or partially enclosed spaces such as garages, crawl spaces, tunnels and basements without proper controls, ventilation, or air cleaners. Make sure all internal combustion engine equipment has adequate clear space on all sides and above it to ensure adequate ventilation. Provide for air blowers or other types of air exchangers. Do not use with internal combustion engines outdoors if placed near doors, windows, vents air handlers etc. which could allow CO to enter and build up in occupied spaces.



Hearing Conservation Program

I. Policy Statement

Turner Construction Company recognizes that excessive noise can cause permanent hearing loss if appropriate administrative or engineering controls or personal protective equipment is not used. Limiting exposure to excessive noise through engineering controls is Turner's preferred method of control. The purpose of this policy is to prevent employee exposure to excessive noise exposure during construction activities. Each contractor working on a Turner project must comply with 29 CFR 1910.95 and 1926, Construction Industry Regulations, in addition to the following guidelines.

II. Procedures

Permissible Noise Exposures

Duration per day, hours	Sound level dBA, slow response
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ or less	115

1. Protection against the effects of noise exposure must be provided when the sound levels exceed those shown in the table above. The measurement must be observed on the A-scale of a sound level meter at slow response.
2. When employees are subjected to sound levels exceeding those shown above, feasible administrative or engineering controls must be utilized.
3. If such controls fail to reduce sound levels within the levels shown above, personal protective equipment must be provided and used to reduce the noise exposure.
4. In all cases where the sound levels exceed the values shown in the table above, a continuing, effective hearing conservation program must be administered.
5. All subcontractors must provide when requested by Turner Construction a comprehensive hearing conservation program prior to beginning work. At a minimum this program shall include:
 - i. Noise survey data for typical work they perform.
 - ii. Noise dosimetry data for typical exposures from the work they perform.
 - iii. Training records for employees working on the Turner Project.



III. Roles and Responsibilities

1. Turner Management:
 - a) Conduct inspections of the workplace for compliance with this policy.
 - b) Discuss policy applications during project orientations and pre-plan meetings with subcontractors.
 - c) Conduct pre-planning meetings and require the use of Job Hazard Analysis (JHA) and Pre-Task Planning (PTP) meetings.
2. Subcontractor Management:
 - a) Comply with and furnish materials necessary to meet the requirements of Turner policy.
 - b) Attend and participate in any and all project orientations, pre-plan meetings, JHA discussions and PTP meetings.
3. Subcontractor Employees:
 - a) Attend and participate in any and all project orientations, pre-plan meetings, JHA discussions and PTP meetings.
 - b) Will comply with this policy.



Hexavalent Chromium

I. Policy Statement

Hexavalent chromium (Cr(VI)) compounds are widely used in the chemical industry as ingredients and catalysts in pigments, metal plating and chemical synthesis. Hexa-chrom can also be found in the construction industry through welding or other abrasive methods, such as grinding or when the compound is heated on stainless steel or on hexa-chrom painted surfaces. Industrial uses of hexavalent chromium compounds include chromate pigments in dyes, paints, inks, and plastics; chromates added as anticorrosive agents to paints, primers, and other surface coatings; and chromic acid electroplated onto metal parts to provide a decorative or protective coating. The major health effects include lung cancer, nasal septum and skin ulcerations and contact dermatitis. The purpose of this policy is to prevent employee exposure to hexavalent chromium compounds during construction activity. Each contractor working on a Turner project must comply with 29 CFR 1926, Construction Industry Regulations, Subpart Z – Section 1126, Chromium (VI), Subpart D (Occupational health and environmental controls) 1910 Subpart I (PPE and respiratory protection) and Subpart J (Welding and cutting) in addition to the following guidelines.

II. Procedures

1. Permissible Exposure Limit (PEL)
 - a) Since this construction activity is limited to specialty work, Turner will direct the Subcontractor to provide specific Job Hazard Analysis (JHA's) and Pre-Task Planning (PTP) meetings to address potential exposure.
 - b) The Employer must ensure that no employee is exposed to an airborne concentration Cr(VI) in excess of 5 micrograms per cubic meter of air (5 ug/m3) calculated as an 8-hour time-weighted average (TWA).
 - c) Engineering controls will be the preferred method to achieve the Permissible Exposure Limit (PEL).
2. Exposure Determination
 - a) The subcontractor must determine the 8-hour TWA exposure for each employee exposed to Cr(VI). This may be accomplished using two options; scheduled or performance-oriented monitoring.
 - b) Scheduled Monitoring
 - The subcontractor must perform initial monitoring to determine the 8-hour TWA for each employee on the basis of a sufficient number of personal breathing zone samples.
 - If the subcontractor does representative sampling, it must be conducted on the employee(s) expected to receive the highest exposure.
 - If the monitoring indicates that employee exposures are below the action level (1/2 the PEL or 2.5 ug/m3), the employee may discontinue monitoring.
 - If the monitoring indicates that employee exposures are at or above the action level, the subcontractor must perform periodic monitoring at least every six months.

c) Performance-Oriented Monitoring



- If this option is chosen, the subcontractor must determine the 8-hour TWA for each employee on the basis of any combination of air monitoring, historical data or objective data sufficient to accurately characterize employee exposure to Cr(VI).
3. Methods of Compliance
- As stated previously, engineering and work practice controls must be used to reduce and maintain employee exposure to Cr(VI) to or below the PEL.
 - If feasible engineering and work practice controls are insufficient to reduce exposure below the PEL, then respiratory protection must be used.
 - The subcontractor **will not** be allowed to rotate employees to different jobs to achieve compliance with the PEL.
4. Respiratory Protection
- a) All Turner employees must comply with the Business Unit Specific Respiratory Protection Program.
- b) When needed, the subcontractor must provide a formal respiratory protection program. Examples include:
- Periods necessary to install or implement feasible engineering or work practice controls.
 - Work operations where an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce the PEL.
 - Emergencies
5. Protective Work Clothing and Equipment
- Where there may be a hazard to the skin or eyes from exposure to Cr(VI) the subcontractor must provide, at no cost, protective clothing or equipment to the employee.
 - The subcontractor must ensure that the employees remove all clothing and equipment that may be contaminated with Cr(VI) when the work is complete or at the end of the shift.
 - The subcontractor must ensure that chromium-contaminated clothing is not removed from the workplace.
 - When contaminated protective clothing or equipment is removed for laundering or cleaning, the subcontractor must ensure that it is stored and transported in impermeable bags or containers.
 - The subcontractor must inform any person who launders or cleans clothing or equipment of the potential effects of exposure to Cr(VI) and that the clothing or equipment should be laundered or cleaned in a manner that minimizes skin or eye contact.
6. Hygiene Areas and Practices
- Where protective clothing and equipment is required, the subcontractor must provide change rooms that comply with 29 CFR 1926.51.
 - Where skin contact may occur, the subcontractor must provide hand-washing facilities that comply with the previously noted standard.



7. Medical Surveillance
 - a) The subcontractor must make medical surveillance available, at no cost, to employees who meet the following criteria:
 - Those who are or may be occupationally exposed to Cr(VI) at or above the action level for 30 or more days a year.
 - Those who are experiencing signs or symptoms of adverse health effects associated with Cr(VI) exposure.
 - Those exposed in an emergency.
8. Communication of Chromium
 - Must follow the same communication of hazardous chemicals highlighted in Turner's Hazard Communication Program.
9. Recordkeeping
 - a) The subcontractor must maintain the following data records;
 - Air monitoring ,
 - Historical monitoring,
 - Objective data,
 - Medical surveillance.

III. Roles and Responsibilities

1. Turner Management:
 - a) Conduct inspections of the workplace for compliance with this policy.
 - b) Discuss policy applications during project orientations and pre-plan meetings with subcontractors.
 - c) Conduct pre-planning meetings and require the use of Job Hazard Analysis (JHA) and Pre-Task Planning (PTP) meetings.
2. Subcontractor Management:
 - a) Comply with and furnish materials necessary to meet the requirements of Turner policy.
 - b) Attend and participate in any and all project orientations, pre-plan meetings, JHA discussions and PTP meetings.
3. Subcontractor Employees:
 - a) Attend and participate in any and all project orientations, pre-plan meetings, JHA discussions and PTP meetings.
 - b) Will comply with this policy.

Infection Control Policy

I. Policy Statement

During the planning process of the construction project, it is important to remember that a hospital is an occupied critical care facility, whose primary function is that of patient care. A construction project can be intrusive to medically fragile patients. All construction projects have the potential to impact infection control in patient areas.

The purpose of this policy is to minimize the potential acquisition of nosocomial infection in patients during hospital construction activities.

II. Procedures

The following are highlights of Turner's Infection Control Construction Policy. These guidelines are provided as a foundation for developing a site-specific control policy that may mirror or compliment an Owners program. An example may be found in the Engineering and Technology Safety section of the TKN2 document management system and in Appendix G of this manual.

1. Planning Phase

- a) Number and placement of isolation rooms,
- b) All air vents must be blocked off and sealed to prevent contamination of duct system before construction begins,
- c) Air handling systems,
- d) Ventilation shall be a high priority item,
- e) Dust mats must be used at the entrances to all work areas,
- f) Number and placement of hand washing facilities,
- g) Staff and patient traffic patterns for the duration of the project,
- h) Relocation decisions regarding patient care areas, storage areas, etc.
- i) Water supply and plumbing,
- j) Waste containment, transport and disposal,
- k) Selection of finishes and surfaces that can be effectively cleaned in clinical areas,
- l) Accommodation of personal protective equipment,
- m) Storage of moveable modular equipment.

2. Operational Phase

- a) Medical waste removal,
- b) Integrity of barrier walls,
- c) Environmental control,
- d) Traffic control,
- e) Cleaning,
- f) Contractor personnel requirements,
- g) Environmental monitoring,
- h) Policy implementation.

3. Completion Phase

- a) Ventilation specifications,
- b) Disinfection procedures,
- c) Water line flushing,
- d) Water line disinfection.



4. Compliance Monitoring
 - a) Air handling,
 - b) Integrity of barrier walls,
 - c) Dress code,
 - d) Environmental control,
 - e) Noise,
 - f) Traffic control,
 - g) Water supply.

III. Roles and Responsibilities

1. Turner management:
 - a) Shall hold an infection control specific pre-planning meeting with the owner and affected subcontractors prior to all work that requires an infection control plan.
 - b) Shall conduct inspections of the workplace for compliance with policy.
 - c) Shall cover policy applications during project orientation with subcontractors.
2. Subcontractor management:
 - a) Shall comply with and furnish materials necessary to comply with Turner policy.
 - b) Shall attend relevant pre-planning meetings, project orientation, and fully participate in the Job Hazard Analysis program.

A comprehensive sample of the Infection Control Plan 2013 is available in Appendix G of this manual.



Lead

I. Policy Statement

Turner is not in the business of performing lead abatement work.

It is the policy of Turner to refrain from engaging in the removal or abatement of lead containing materials when performing renovation or building activities. Turner will request that owners have an inspection made by a certified testing company, industrial hygienist, or lead removal contractor prior to the start of work. Where lead is found, the owner must contract for its removal. Turner must obtain certification that the lead has been removed and the area is safe to work.

II. Procedures

1. Prior to the start of work, Turner will request the building owner to provide a pre-demolition survey for lead based materials, prepared by a qualified consultant.
2. All individuals must receive Lead Hazard Awareness Training prior to beginning work in areas that have materials containing lead.
3. If the assessment identifies lead containing material, Turner will request that the owner remove or abate the area of concern and provide written certification (e.g. clean letter) that the ambient condition of the area is below OSHA's action level for lead (<30ug/m3).
4. If lead is encountered during construction activity, Turner will stop work and request that the owner remove or abate the material.
5. Before resuming work, The Turner Superintendent will request a written certification (e.g. clean letter) that the ambient condition of the remediated area is below OSHA's action level for lead (<30ug/m3).
6. If the owner requests that Turner perform the abate work, a contract of convenience must be entered into with Turner and only qualified remediation contractors, who satisfy company pollution liability requirements, will be retained.
7. The Turner Superintendent must notify the Business Unit Environmental, Health, and Safety Director (BUEHSD) and the BU Claims Coordinator. They will then notify the appropriate Turner Risk Management Regional Claims Manager.
8. The BUEHSD will complete the Turner Environmental Risk Investigation Report and submit it to the Business Unit Operations Manager, National EH&S Coordinator, and the Risk Management Department Claim Director.
9. If Turner is contractually obligated to manage the remediation the Business Unit must secure written approval from the National EH&S Coordinator and the Risk Management Claim Director as required by the Environmental Operational Policy.



10. A Lead Compliance Plan that includes negative exposure assessments by work activities will be required if Turner or their subcontractors are required to disturb lead based painted surfaces during demolition or renovation activities. This plan includes the requirements for engineering controls, work practice controls, personal protective equipment, HEPA vacuums, respirators, air monitoring and dust controls for protection from exposure to lead. The Plan will provide guidance for complying with the regulatory requirements of 29 CFR 1926.62 Lead.

III. Roles and Responsibilities

1. Turner Management:
 - a) Must ensure compliance with this policy.
 - b) Must discuss policy applications during project orientation with subcontractors.
 - c) Must provide Lead Hazard Awareness Training to all employees working in or around material containing lead.
2. Subcontractor Management:
 - a) Must comply with and furnish materials necessary to comply with Turner policy.
 - b) Must attend and participate in the Lead Hazard Awareness Training.
3. Subcontractor Employees:
 - a) Must attend and participate in project orientations and Lead Hazard Awareness Training.
 - b) Must report immediately anytime lead containing material is discovered or disturbed.

A comprehensive sample of Written Lead and heavy metal Program is available in Appendix F of this manual.



Heat & Cold Stress Prevention

I. Policy Statement

Turner Construction expects all subcontractors to provide to their employees areas of relief from the element exposure. The expectation is to utilize the best method of controlling the employee from the exposure. Examples are to provide overhead tarps to shield from the sun, misters, heaters, scheduling work activities, job rotation etc. to reduce the exposure. Subcontractors shall ensure that all employees are trained on the warning signs / symptoms of early heat or cold related disorders, and instructed on the clothing and work methods best suited to avoid heat and / or cold stress.

II. Procedures

1. Turner and subcontractors must make sure workers exposed to safety and health risks because of hot or cold conditions at the workplace are provided with information, instruction and training on recognizing and avoiding injury or illness from thermal stress.
2. Turner and subcontractors must make sure all supervisors know about heat and cold related illnesses, symptoms, prevention and treatment. Supervisors must be able to recognize unsafe conditions and take corrective action immediately. It is the responsibility of the subcontractor to provide engineered prevention to minimize weather hazards.
3. The risk of heat related illnesses can be reduced by preventive and control measures, including: engineering controls to provide a cooler work place; administrative controls to reduce exposure and recognize symptoms of heat related illness; and personal protective equipment, when necessary, to further limit exposure.
4. The risk of cold related injury can be reduced by preventive and control measures, including: using a buddy system or supervision of workers; limit the amount of heavy work; wearing appropriate clothing for cold weather including layering; encourage continuous body movement (minimize sitting and standing still) in cold environments, and protect workers from drafts; educate employees on the symptoms of cold related stress including heavy shivering, uncomfortable coldness, severe fatigue, drowsiness and / or euphoria; and engineering controls can be effective such as using heaters in areas, where practical, shielding work areas from winds and drafts.

A comprehensive Heat & Cold Stress Prevention Plan is available in Appendix J of this manual.



Tobacco Policy

I. Purpose

Use of tobacco products and secondary tobacco smoke is a documented significant health hazard. Smoking activities also provide ignition sources for fires associated with flammable and combustible materials and smokeless tobacco creates sanitation hazards on floors and in working areas. In addition, these activities create a housekeeping problem in the workplace when improper disposal of smoking or smokeless material occurs. With e-cigarettes (with or without nicotine) gaining popularity it is necessary to address those as well and while they may be safer than smoking tobacco the long term risks and effects of second hand exposure are still not known. This policy will reduce employee exposure to secondary tobacco smoke, assist in the prevention of fires in the workplace, and help keep the workplace clean.

II. Scope

1. This policy covers the use of smoking tobacco products (i.e.; cigarettes, pipe embers, cigars, etc.), smokeless tobacco products (i.e.; dip, snuff, chew, etc.) and all forms of electronic cigarettes or e-cigarettes, etc.
2. This policy is to be adhered to by all Turner employees, contractors, and visitors. This policy applies to all offices (Business Unit or project), warehouses, and projects.

III. Policy Statement

1. All tobacco products, smokeless tobacco products, and e-cigarettes as described above are prohibited in all Turner offices, project offices, warehouses, and on projects. The project or office can designate smoking areas that must comply with all ADA, state, and municipal regulations.
2. Certain owners may also have non-smoking policies and Turner employees, subcontractors and visitors will comply with those policies fully.
3. In order to ensure compliance with the above provisions please do the following:
 - a) Prominently display no-smoking signs in offices and on projects,
 - b) Inform individuals about this policy and let them know they may be subject to removal, fines and penalties (certain state or local fire department regulations),
 - c) Instruct individuals found using tobacco or e-cigs to immediately stop

Turner Construction Company recognizes that our employees and workers are our most valuable assets and the most important contributors to our continued growth and success. We are not only concerned about your welfare as a Turner employee, but also the welfare of others who could be put in harm's way by secondary exposure. We are therefore firmly committed to providing a safe work environment for all workers and set forth this policy for the elimination of tobacco and related products in the workplace.



Sanitation Policy

I. Policy Statement

Each contractor working on a Turner project will comply with 29 CFR 1926, Construction Industry Regulations. Employers shall establish and maintain basic sanitation Provisions for all employees in all places of employment as Specified in the following paragraphs.

II. Procedures

1. Drinking water supply
 - a) An adequate supply of drinking water shall be provided in all places of employment. Cool water shall be provided during hot weather.
 - b) Drinking water shall be provided according to the requirements of the Safe Drinking Water Act, as amended, and all applicable Federal, state, and local regulations. Refer to the most current Version of 40 CFR 141 and 40 CFR 143, for updates to the national drinking water regulations. Refer to individual state and local regulations, as applicable, for updates in those Regulations.
 - c) Only approved potable water systems shall be used for the distribution of drinking water.
 - d) Drinking water shall be dispensed by means that prevent contamination between the consumer and the source.
2. Portable drinking water dispensers shall be designed, Constructed, and serviced to ensure sanitary conditions; shall be Capable of being closed; and shall have a tap. Containers shall be clearly marked as “**drinking water**” and shall not be used for other purposes. Water shall not be dipped from containers.
 - a) Fountain dispensers shall have a guarded orifice.
 - b) Use of a common cup (a cup shared by more than one Worker) is prohibited without the cup being sanitized between uses.
 - c) Employees shall use cups when drinking from portable water Coolers/containers. Unused disposable cups shall be kept in sanitary containers and a waste receptacle shall be provided for used cups.
3. Nonpotable water.
 - a) Outlets dispensing nonpotable water will be conspicuously posted:
"Caution - water unsafe for drinking, Washing, or cooking"
 - b) Cross-connection - open or potential - between a system
 - c) Furnishing potable water and a system furnishing nonpotable water is prohibited.
4. Toilets
 - a) When sanitary sewers are not available, one of the Following facilities, unless prohibited by local codes, shall be provided: chemical toilets, recirculating toilets, combustion toilets, or other toilet systems as approved by state/local governments.
 - b) Each toilet facility shall be equipped with a toilet seat and toilet seat cover. Each toilet facility - except those specifically designed and designated for females - shall be equipped with a metal, plastic, or porcelain urinal trough. All shall be provided with an adequate supply of toilet paper and a holder for each seat.
 - c) Toilet facilities shall be so constructed that the occupants shall be protected against



- weather and falling objects; all cracks shall be sealed and the door shall be tight-fitting, self-closing, and capable of being latched.
- d) Adequate ventilation shall be provided and all windows and vents screened; seat boxes shall be vented to the outside (minimum vent size 4 inches (10.1 centimeters) inside diameter with vent intake located 1 in (2.5 cm) below the seat.
 - e) Toilet facilities shall be constructed so that the interior is lighted.
 - f) Toilets at construction job sites.
 - Toilets shall be provided according to table 2-1. Where toilet rooms may be occupied by no more than one person at a time, can be locked from the inside, and contain at least one toilet seat, separate toilet rooms for each sex need not be provided.
 - Under temporary field conditions, provisions shall be made to assure that at least one toilet facility is available.
 - Toilets should be kept inside the project fence.
 - g) No Half High / High Rise portable toilets are allowed on Turner projects unless protected by a partition to assure privacy.

Table 2-1

Minimum toilet facilities (construction sites)

Number of employees	Minimum facilities (per sex)
20 or less	One
21 to 199	One toilet seat and one urinal for every 40 workers
200 or more	One toilet seat and one urinal for every 50 workers

- h) Each water closet shall occupy a separate compartment with a door that can lock from the inside and walls or partitions, between fixtures, of sufficient height to assure privacy.
- i) Provisions for routinely servicing and cleaning all toilets and disposing of the sewage shall be established before placing Toilet facilities into operation. The method of sewage disposal and location selected shall be in accordance with federal, state, and local health regulations.

5. Washing Facilities

- a) Washing facilities shall be provided at toilet facilities and as needed to maintain healthful and sanitary conditions. Washing facilities for persons engaged in the application of paints, coatings, herbicides, insecticides, or other operations where contaminants may be harmful shall be at or near the work site and shall be adequate for removal of the harmful substance.
- b) Each washing facility shall be maintained in a sanitary condition and provided with water (either hot and cold running water or tepid running water), soap, and individual means of drying. However, where it is not practical to provide running water, hand sanitizers may be used as a substitute.
- c) Whenever employees are required by a particular standard to shower, showers shall be provided in accordance with the following:
 - One shower shall be provided for every ten employees (or fraction thereof) of each sex



who are required to shower during the same shift;

- Body soap or other appropriate cleansing agent convenient
- to the shower shall be provided;
- Showers shall have hot and cold running water feeding a common discharge line; and
- Employees using showers shall be provided with individual clean towels.

- d) Whenever employees are required by a particular Standard to wear protective clothing, change rooms with storage facilities for street clothes and separate storage facilities for protective clothing shall be provided.
- e) Whenever working clothes are provided by an employer and become wet or are washed between shifts, provision shall be made to ensure such clothing is dry before reuse.

6. Food Service

- a) All cafeterias, restaurants, mess facilities, and related facilities on areas, projects, or installations shall be established, operated, and maintained in compliance with the health and sanitation recommendations of the United States public health service and applicable state and local regulations.
- b) All food service operations shall be carried out in a sound manner. Food shall be free from spoilage and kept uncontaminated throughout the storage, preparation, and serving process.
- c) No food or beverage shall be consumed or stored in a toilet room or in any area exposed to a toxic material.
- d) An adequate number of waste receptacles shall be provided in the food service area receptacles shall be constructed of corrosion resistant or disposable material, provided with solid tight-fitting covers (covers may be omitted where sanitary conditions can be maintained without the use of a cover), emptied at least daily, and maintained in a sanitary condition.

7. Waste Disposal

- a) Receptacles used for putrescible or liquid waste material shall be so constructed to prevent leakage and to allow thorough cleaning and sanitary maintenance. These receptacles shall be equipped with a solid tight-fitting cover, unless it can be maintained in sanitary condition without a cover.
- b) Solid and liquid waste shall be removed in a way that avoids creating a menace to health and as often as necessary to maintain a sanitary environment.

8. Vermin Control

Enclosed workplaces shall be constructed and maintained, as far as practical, to prevent the entrance or harborage of rodents, insects, and other vermin. An effective extermination program shall be instituted where the presence of such vermin is detected.



Health and Wellness Program

Overview

Turner is committed to the health and wellness of all workers who enter our jobsites. As such Turner has mandated the utilization of a Health and Wellness program for every project. The purpose of a workplace health and wellness program is to offer a comprehensive health service for all site workers who are potentially exposed to various health hazards or situations. Health and Wellness consists of different integrated concepts that we need to provide at each of our projects.

Integral to the commitment to a workers health is ensuring injured workers receive prompt and quality medical care. Similarly, wellness, or state of physical, mental and spiritual health, is essential to a healthy workplace strategy. A wellness-oriented environment encourages workers to adopt habits and behaviors that promote better health, a safe worksite and an improved quality of life. And, it's believed that this concept will cultivate a work environment that workers will look forward doing their job and doing it well.

Health

Rendering prompt and quality medical treatment at the moment of injury is the first essential step in successful care and medical management of an injured worker. The benefits of providing acute medical care include:

- Providing potentially life-saving care
- Stabilizing severely injured workers
- Preventing minor injuries from becoming more serious

Other important considerations include:

- Reducing the number of potential lost time matters
- Decrease costs arising from larger WC Claims
- Enhanced productivity by treating minor injuries on site and enabling workers to immediately return to work

Immediate and effective medical care is provided by onsite medical services typically provided by an Emergency Medical Technician (EMT) trained to respond to medical emergency such as traumatic injuries, health issues and accident scenes.

Below are project guidelines for the use of an EMT based on construction volume (actual or anticipated):

- **\$80M or greater- Full time on site EMT**



- **\$20M up to \$80M. Either full time EMT or On Call EMT (roving)**
- **Under \$20M. On Call (roving) EMT or telephonic incident response**
- **Regardless of project volume, consideration of the hazardousness or risk involved.**

If the project is on a hospital campus or a healthcare facility is in the immediate vicinity of the project, the healthcare facility can be used to meet this requirement. Each project at a minimum is to provide a room where treatment can be rendered with privacy and other wellness services furnished.

We've partnered with who we perceive as "best in class" onsite medical care vendors. They are Onsite Medical, Amphibious, Banda and Onsite Health and Safety.

Choosing these vendors involved examining a number of criteria including:

- **having qualified EMTs**
- **geographic reach**
- **flexibility to respond to incidents and willingness to enhance their record keeping**
- **past Turner or other industry experience.**

Value added benefits of onsite medical include:

- **Support Return to Work efforts which results in more favorable outcomes**
- **Follow up with workers to ensure proper care has been provided**
- **Assist in understanding how losses occur and preventing them**
- **Provide critical documentation on the cause of loss and exact injury type in the event of litigation or governmental inquiry**
- **Provide incident data to support risk mitigation**
- **Support site safety efforts**
- **Conduct drug and alcohol testing**
- **Provide vaccinations (e.g. Flu, Tetanus, etc.)**

Engagement Options

The method of engagement for these vendors will be done through a professional service agreement (PSA). Depending on the need and capacity to engage an onsite EMT for a project, there are two principal options which enable the project team to decide which options is more suitable.

1. **Full time onsite EMT for the duration of the project-start to finish.**
2. **Full time onsite EMT during certain periods of time where the risk of injury is greater. The full time onsite EMT cost is based on a flat fee for the time period of the contract.**



3. **Roving or “On Call” EMT.** The roving EMT can respond to a site promptly following an accident. They provide the same level of experience but are not on site full time and are deployed on an as needed basis. Roving EMTs charge on a per visit basis.
4. **Telephonic incident response.** A site safety person or the responsible Turner personnel contacts an immediately available medical professional upon notice of an injury for guidance / direction.

Wellness

It's understood that the advantages of wellness translates into job satisfaction for workers, and a more content and productive workforce. And, that translates into a strategic advantage as well as ensuring Turner is contributing towards its goal of being a responsible corporate citizen. By offering a wellness program at our projects it can result in behavior modification leading to a healthier and safer workforce.

With working internally and with vendors to develop a wellness program that can provide guidance that supports healthy living. They might include:

- **Nutrition / Weight Loss / Smoking cessation**
- **Target loss driving areas to reduce or mitigate injuries**
- **Work/Life Balance and time management**
- **Physical and mental health support**
- **Personal health issues such as high blood pressure, diabetes, age issues, etc.**



Respiratory Protection

I. Policy Statement

Turner Construction Company is committed to maintaining an injury and illness free workplace and will make every effort to protect employees from harmful airborne substances.

This will be accomplished through engineering controls such as ventilation or substitution with a less harmful substance or through administrative controls limiting the duration of exposure. When these methods are not adequate, Turner will provide training, fit-testing, medical surveillance, and proper respirators to allow Turner employees to breathe safely in potentially hazardous environments.

Turner recognizes that respirators have limitations and their successful use is dependent on an effective respiratory protection program. Our full Respiratory Protection Program is designed to identify, evaluate and control exposure to respiratory hazards and to provide for the proper use, care and maintenance of respiratory equipment. Each Business Unit affected must oversee a written respiratory program. Prior to implementation the Business Unit Environmental, Health, and Safety Director shall approve program elements.

This program is designed for Turner Construction Employees. Subcontractors are required to submit and have accepted by Turner their company's respiratory protection program prior to start of work. Compliance with this policy applies to filtering face-piece respirators (dust masks) as well.

All programs shall meet or exceed Federal, State, and Local regulatory requirements.

II. Program Elements

1. Highlights of a Business Unit Specific Program are to include the following:

a) Program Administration

- A formal annual audit of the Respiratory program is required for all companies who actively using respirators. A Respirator Program Evaluation Worksheet should be used to document the evaluation and to record recommended changes.

b) Workplace Exposure Assessment & Ongoing Surveillance

- Exposure assessment is critical in identifying harmful airborne contaminants, their extent and magnitude and how to control them.
- Turner Project Staff (TPS) must make every effort through evaluations and training to ensure that employee exposure does not exceed permissible concentrations
- Results of these evaluations will be summarized and a record maintained in the jobsite project files. Additional evaluations are necessary if exposures change due to new materials, process changes or other conditions increasing the degree of employee exposure. Copies of all results shall be sent to the Business Unit Human Resource Manager who shall maintain an archive for 30 years for all Turner employees evaluated.
- Subcontractors shall provide proof of exposure assessments, training, and medical surveillance for their employees prior to performing work with any material that may require respiratory protection.
- Subcontractors may not perform any work with chemicals or materials that may cause a respiratory hazard or nuisance odor for Turner Employees, other Subcontractors, or the general public without scheduling the work with Turner. Examples of such activities include



applying hazardous paints or coatings; saw-cutting or grinding concrete, applying spray on fireproofing.

c) Respirator Selection

- In those instances where engineering and administrative means do not achieve the desired control, respirators must be worn. Different types of respirators are available for a variety of applications. Turner must ensure that the proper NIOSH/MSHA approved respirator is selected and used for the kind of work being performed and the hazards involved.
- Respirator selection information must be completed to document the selection process.

d) Evaluating Respirator Wearer Health Status

- Even with appropriate equipment and adequate training provided, an employee's health status must be considered before allowing respirator use. The wearer's physical and medical condition, duration and difficulty of the tasks, toxicity of the contaminant and type of respirator all affect an employee's ability to wear a respirator while working. Therefore, Turner must ensure that each employee's physical ability to wear a respirator is evaluated.
- Each respirator wearer will be given a medical evaluation. The project will make appropriate arrangements with a proper medical organization to perform the evaluation. The Medical Evaluation and Work Restriction report must be completed for each individual.

e) Respirator Fit Testing & Assignment

- After selection of the appropriate type of respirator and verifying the employee's ability to work while wearing a respirator, Turner will ensure that a qualitative fit test is conducted to choose the best fitting face piece and determine the specific brand, model and size for each employee. The Qualitative Fit Test Record form will be completed. The form will record test results and document respirator assignment.
- Quantitative fit is the preferred alternative to qualitative fitting. Although it requires specialized equipment and trained personnel, some exposures require a quantitative fit test.

f) Training

- Once the employee is fitted with the correct respirator for the task, that employee must be thoroughly trained in the need, use, limitations, inspection, fit checks, maintenance and storage of the equipment. This training may be initiated during the fit test.
- The manufacturer of the equipment provides detailed instructions for use and care of the respirator, and this information is to be used in the training. The Respirator User Training and Education Form is to be used as a guide and record of training received.

g) Record keeping

- Turner must document each major component of the program to verify that each activity has occurred and evaluate the success of the program to satisfy regulatory requirements.
- These records include the written program, exposure determination, respirator selection, physical status evaluation, fit testing and respirator assignment, training form and program assessment.
- All records that involve Turner employees must be sent to the Business Unit Environmental, Health, and Safety Director and archived for a minimum of 30 years.



Occupational Health
Respiratory Protection

A comprehensive sample of the Turner, Asbestos, Lead, Silica and Respirator Management Program is available in Appendix H of this manual.



Crystalline Silica Exposure Prevention

I. Policy Statement

This policy is designed to protect employees who may come into contact with silica during the course of their work. This applies to all occupational exposures to respirable crystalline silica in construction work, except where employee exposure will remain below 25 micrograms per cubic meter of air (25 µg/m³) as an 8-hour time-weighted average (TWA), under any foreseeable conditions.

II. Silica Exposure Prevention & Control: Responsibilities

Due to the risk posed by respirable silica, it is critical that all personnel involved in activities that could potentially create silica dust take specific actions to ensure that, as much as practicable, a hazard is not created. In recognition of this, the following (Silica related) responsibilities have been established and must be adhered to:

The BU EH&S Director is responsible for:

- Ensuring project and/or task specific Exposure Control Plans (SECPs) are developed communicated and effectively implemented as appropriate.
- Ensuring that all employees (*i.e. Managers, Supervisors and Workers*) receive the necessary education and training related to this Policy, as well as project/task specific SECPs.
- Implementing a suitable respirable silica exposure monitoring program, or otherwise ensuring representative exposure monitoring results are available. The purpose of the program will ensure that (over time) Turner has quantifiable silica exposure data available for all regularly occurring, as well as reasonably foreseeable, work activities.
- Regularly evaluating new equipment and technologies that become available, as able/appropriate, purchasing the “best available” equipment/technologies. Equipment/technologies with (silica) dust suppression and/or capture technologies will generally be given preference over equipment/technologies that lack such.
- Maintaining applicable long-term records (*i.e. exposure sampling, inspections, respirator fit tests, training records, etc.*).
- Conducting a review of this Policy, as well as: (1) project/task specific SECP’s, (2) available exposure monitoring data, (3) Industry/Regulatory information, and (4) new/emerging equipment/technologies on a regular (*i.e. annual*) basis.

Safety Managers/Superintendents/Foreman are responsible for:

- Developing or obtaining a copy of the project/task specific Silica Exposure Control Plans (SECPs) and ensuring such are made available at each work site.
- Ensuring that all workers (*under the supervisor’s direction and control*) have received the necessary education and training. As appropriate, each supervisor must ensure that workers are available to “demonstrate competency” for identified tasks.
- Coordinating work activities of multiple contractors/crews as required, and/or otherwise implementing the controls necessary to protect others (*i.e. erecting of barricades and signage*) who could be adversely effected.
- Using control measures described in the Risk Control section of this program below, maintain employee exposure to crystalline silica to concentrations as low as possible, and in no event exceed the OSHA Permissible Exposure Limit of 50 micrograms per cubic meter of air (50 µg/m³) as an 8-hour time-weighted average (TWA).



- Ensuring that all the tools, equipment, PPE and materials (*including water*) necessary to implement the SECP is available (*and in good working order*) prior to allowing work activities to commence.
- Maintaining applicable records (i.e. exposure sampling, inspections, respirator fit tests, training records, etc.) in accordance with [Insert Company Name Here]'s record retention procedures/practices.

III. Silica Exposure Prevention & Control: Risk Identification and Assessment

Turner has conducted extensive employee exposure sampling and obtained "objective data" from other sources and used this information to prepare a "Table 1 Silica Exposure Controls" to help us identify each task or exposure related to silica that our own employees may be subject to, and to specify controls, tools and PPE to control exposure. Please reference that document at the TKN Safety webpage and use the applicable data to prepare all site-specific Exposure Control Plans for Silica, related to Turner employee exposures.

Each employer that has employees exposed to crystalline silica must prepare and implement a written site-specific Exposure Control Plan (ECP) that identifies tasks that involve exposure and the methods used to protect workers, to include procedures to restrict access to work areas with high exposures. A competent person from each exposing employer, as well as Turner, shall be designated to implement the exposure control plan. A copy of the designation by the employer will be provided to Turner.

Each exposing employer must notify Turner in writing of any activities to be undertaken that could lead to silica exposure above the action limit. Turner will coordinate the activities of all contractors to minimize exposure from one employer to another. These activities should be discussed and planned for in weekly coordination meetings, safety meetings, and huddles. Each employer must utilize control methods that mitigate exposure to the lowest achievable level so as not to expose other employees or subcontractors. Each employer must control access to their area through the use of control zones, DANGER signs, spotters, etc. Certain tasks may have to be done off-hours so as not to expose additional employees.

Risk Identification: Silica is contained in many of the materials and products used/encountered on our projects (i.e. the Lafarge Safety Data Sheets (SDS) for concrete reveals the potential for up to 90% crystalline silica, while the SDS from Aggregate supplier (Mainland Sand & Gravel Ltd.) identifies the potential for between 50-77% Silica in aggregate). Silica dust can be readily released through the various tasks performed by Turner and its contractors. Each contractor must identify sources of exposure for its employees and plan accordingly. Reference safety data sheets and other reference sources to determine silica content. If these sources are not available, samples can be sent to a laboratory or air samples can quantify airborne exposure. Contractors may use a variety of additional methods to assist with the assessment of (possible and actual) silica exposures. These methods will include, but may not necessarily be limited to:

- Reviewing data/reports available in the public domain (i.e. OSHA, NIOSH) and industry associations (including the ABC, AGC).
- Regularly consulting with the Safety Resources/Safety Managers from firms who perform similar work (i.e. through ATAC (Asphalt Technical Advisory Committee)).
- Implementing a suitable respirable silica exposure monitoring program. This program will ensure that (over time) Turner has quantifiable silica exposure data available that is representative of all regularly occurring, as well as reasonably foreseeable work activities. Exposure monitoring will generally be conducted "in-house", although assistance (i.e. actual monitoring and/or



interpretation of results) may be obtained through outside consultants/hygienists. All data captured, and corresponding reports and findings, must be sent to Corporate EH&S Department.

Turner will not allow the use of any compound for abrasive cleaning that contains more than 1% silica. Employee sampling must be conducted to verify that concentrations released from the media being finished does not exceed allowable OSHA PEL's, TLVs, etc. For abrasive blasting, replace silica sand with less toxic materials. The National Institute for Occupational Safety and Health highly discourages the use of sand or any abrasive with more that 1% crystalline silica in it. As an alternative, garnet, slag and steel grit and shot may be suitable substitutes.

IV. Silica Exposure Prevention & Control: Risk Control

Control Methods: When determining measures to reduce or eliminate worker exposure to silica dust, contractors must select controls in this order of preference:

1. Elimination and Substitution
2. Engineering
3. Administrative
4. Personnel Protection Equipment (PPE)

Substitution and Elimination: Whenever possible, the exposing contractor will substitute products containing silica with products that do not contain (or contain a lower percentage of) crystalline silica. While there have historically been few "substitution" options available, each contractor must recognize the importance of planning work in order to minimize the amount of silica dust generated. During the planning phases of a project, advocate for the use of methods that reduce the need for cutting, grinding, or drilling of concrete surfaces.

Engineering Controls: Engineering controls are those controls which aim to control or otherwise minimize the release of crystalline silica. Two "common" engineering control options are available to in many circumstances. These include the Local Exhaust Ventilation (LEV) and Wet Dust Suppression (WDS) systems. Another could be "Isolation" of the silica creating activity or machine/tool.

Local Exhaust Ventilation Systems: Tools/equipment specific LEV systems are available on some tools and equipment. Such LEV systems are generally comprised of a shroud assembly, a hose attachment, and a vacuum system. Dust-laden air is collected within the shroud, drawn into the hose attachment, and conveyed to the vacuum, where it is filtered and discharged. "Large scale" LEV systems, such those available on some Vacuum Trucks and Mobile Sweepers, may also be employed (at times) on Turner projects.

When/if LEV systems are used, the contractor will employ the following systems and safe work practices:

- Vacuum attachment systems that capture and control dust at its source whenever possible.
- Dust control systems will be maintained in optimal working condition.
- Grinding wheels will be operated at the manufacturer's recommended RPM (operating in excess of this can generate significantly higher airborne dust levels).
- HEPA or good quality, multi-stage vacuum units (approved for use with silica dust) will be used in accordance with the manufacturer's instructions. Vacuums with back-pulse filter cleaning cycles are effective at avoiding clogging and maintaining dust capture velocity.
- Whenever possible, concrete grinding will be completed when the concrete is wet (*thus dust release will be significantly reduced*).

Regular fans (such as box-fans, area-fans, etc. do not qualify as an engineering control, by themselves, and may actually increase silica exposures by re-entraining settled particles into the air.

Wet Dust Suppression Systems: Many tools and equipment types are equipped with Wet Dust Suppression (WDS) systems (i.e. on the Milling equipment, sweeper equipped Bobcats, as well as attachments on various hand held/portable, abrasive/cutting equipment). When WDS Systems are not available, (as a standard or retrofitted part of a tool/appliance), similar effects can also be achieved by manually wetting the surface (i.e. with a mister or with a hose).

When WDS systems are used, the contractor will employ the following systems and safe work practices:

- If water is not readily available on the project, the project supervisor will arrange to have a water tank delivered to the site for use.
- Pneumatic or fuel (i.e. gasoline) powered equipment will generally be used instead of electrically powered equipment if water is the method of dust control, unless the electrical equipment is specifically designed to be used in such circumstances.
- Pressure and flow rate will be controlled in accordance with the tool manufacturer's specifications.
- When sawing concrete, tools that provide water directly to the blade will be used if possible.
- Wet slurry will be cleaned from work surfaces when the work is complete, if/when necessary.
- If dust suppression water is recirculated, micron filtration and sanitation must be considered.

Administrative Controls: Administrative controls are those that aim to control or otherwise minimize the release of silica through the use of work procedure and work methods, rather than by affecting the actual physical work. Common examples of administrative controls include, but are not limited to:

- Posting of warning signs similar to the one shown at right, when respirators are required as the exposure control.
- Rescheduling of work as to avoid the activities of others.
- Relocating unprotected workers away from dusty areas.



When administrative controls are used, the contractor will employ the following systems and safe work practices:

- Suitable exposure control strategies will be discussed and determined. As necessary and appropriate, supplemental (to this policy/procedure) project and task specific Exposure Control Plans will be developed.
- Suitable housekeeping, restricted work area, hygiene practices, training and supervision procedures/standards will be determined and implemented on Turner projects.
- As appropriate, barriers will be erected around known silica dust generating activities, and/or warning signs will be posted.
- As able, work activities will be scheduled to minimize the silica related effect on, and from, others.

Personal Protective Equipment Controls: When used in conjunction with the other (*i.e. Engineering and Administrative*) controls elsewhere identified, personal protective equipment and clothing can help further reduce employee exposure to silica dust. Our first line of defense is to select higher order controls that would eliminate the need for PPE.

An air purifying respirator fitted with HEPA cartridges is the most common piece of PPE that would be used to minimize exposure to silica dust. In some cases, a dust-mask (which is also a respirator) with a NIOSH “N” rating may be acceptable.



Prior to a respirator being used, the employee must be medically cleared to wear a respirator (including dust masks) and fit-tested in accordance with 29 CFR 1910.134 and Turner Construction’s Respiratory Protection Program. Employees must have documented training for respiratory protection. In addition to the medical clearance above, for any employee who is required to wear a respirator for silica exposure 30 or more days a year, the employee must have an initial medical exam including x-ray, Pulmonary Function Test, and other requirements, along with ongoing periodic medical surveillance (typically every 3 years). Records of the medical exams and any exposure monitoring records of operations are to be kept by the employer. Respirators are “seal dependent”, and thus the users must be “fit tested” annually and clean shaven where the respirator seals to the face.

In addition to respiratory PPE, protective clothing (*i.e. disposable/washable coveralls*) may be used and/or required to help prevent the contamination of the worker’s personnel clothing.

General Requirements

Employer shall not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not feasible.

Employers who use “Table 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica” (found in the OSHA Silica standard for construction) correctly do not have to provide exposure monitoring of employees and are not subject to the listed PEL. The table spells out the need for respiratory protection (along with minimum assigned protection factors) for certain operations.

If exposure control methods listed in Table 1 are not used, then the employer:

- a. must perform an exposure assessment to assess the exposure of each employee who is or may reasonably be expected to be exposed at or above the action level.
- b. protects workers from exposures above the permissible exposure limit (PEL) of 50 micrograms per cubic meter of air averaged over an eight-hour day;
- c. Dust control measures must be used to protect workers from exposures above the PEL; and
- d. Provide respirators to workers when dust controls cannot limit exposures.

For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust.

Using wet methods, apply water at flow rates sufficient to minimize release of visible dust

If performing multiple tasks from Table 1 that in whole exceed 4 hours, use the respiratory protection for each task that’s designated for >4 hours’ work.



After working with products that contain crystalline silica, each individual will be required to thoroughly wash their hands before eating, drinking or smoking. Eating, drinking or smoking near silica or in silica-regulated areas is strictly prohibited.

V. Silica Exposure Prevention & Control: Education and Training

Education and Training: Prior to performing activities, or working on project sites where personnel could be exposed to silica dust, ensure that applicable personnel receive suitable education and training. While not necessarily an exhaustive list, education and training may include:

- The hazards and risks associated with exposure to silica dust.
- The signs and symptoms of silica related diseases.
- General and specific silica exposure reduction methods/strategies (*i.e. as detailed in the general/specific exposure control plans*).
- The use of specific pieces of equipment and control systems (*i.e. LEV and WDS systems*).
- The use and care of respiratory (and other) personal protective equipment.
- How to seek first aid (*i.e. for respiratory related concerns, including those that may be caused/associated with silica dust exposure*), and
- How to report items of the concern (*i.e. those related to silica dust*).
- Be sure to reference "Table 1 Silica Exposure Controls".

The education and training detailed will be delivered through a variety of forums, including but not necessarily limited to:

- New Employee Orientations
- Project/Site Orientations
- Equipment/task specific training, *all personnel must be trained to a level of "demonstrated competency" prior to using required tools, equipment and appliances*
- Safety huddles and tool box talks
- Notifications and Bulletins



Section

5

TURNER RISK MANAGEMENT CORPORATE ENVIRONMENTAL, HEALTH AND SAFETY POLICY

Subcontractor Requirements



SUBCONTRACTOR SAFETY PROGRAM REQUIREMENTS

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- 5.1 Required Safety Documentation for Subcontractors
- 5.2 Overview of Project Safety Requirements
- 5.3 General Requirements
- 5.4 Subcontractor Substance Abuse Program
- 5.5 Standard Safety Forms & Postings



5.1 Required Safety Documentation for Subcontractors

Complete Package and Submit to Turner Project Superintendent of Safety Prior to Start of Work

- ☐ 1. Safety and Health Program – Site Specific – Include Substance Abuse Program
- ☐ 2. CPR/First Aid Training Cards with Expiration Dates
- ☐ 3. Identify Trained “Competent Persons” Per OSHA (see next page).
- ☐ 4. Insurance Certificates (enrollment info for CCIP or OCIPs also)
- ☐ 5. OSHA 30 Hr. Construction Safety Trained Personnel (submit a copy of cards) or enroll in 30-Hour on Turner University.
- ☐ 6. MSD-Sheets and Chemical Inventory List with HAZCOM Program. (Form #1)
- ☐ 7. Job Hazard Analysis Forms (JHA) (Form #6)
- ☐ 8. Fall Protection Documentation Training (if exposed to fall hazards)
- ☐ 9. Fall Protection Site-Specific Plan (if exposed to fall hazards)
- ☐ 10. If you have a crane provide: Annual Inspection Certification, Operators Qualifications or Certifications, Monthly Crane Inspection, Daily Crane Inspection, Pick Plans, Critical Lift Plans (Form #2C), Crane & Off-Road Vehicle Inspections (Form #2B) *all crane inspections must be performed by a third party.
- ☐ 11. Fork Lift Training Cards (Submit cards if applicable)
- ☐ 12. Scissors Lift and Aerial Boom Lift Training Cards (Submit cards if applicable)
- ☐ 12. Ladders Last Permit & Inspection Form (Form #2a)
- ☐ 13. Daily Submit Pre-Task Plan (Form #7)
- ☐ 14. Weekly Documentation
 - A. All Daily Inspection Sheets for Cranes, Equipment, Scaffolds, Lifts, Forklifts,
 - B. Weekly Safety Meeting Minutes
 - C. Weekly inspection of fall protection system.

Key Personnel and OSHA Competent Person

Company Name _____	Project Name _____
Superintendent _____	Contact Phone # _____
On-site Safety Coordinator _____	Contact Phone # _____
Company Safety Director _____	Contact Phone # _____



Subcontractor Requirements

OSHA Regs requiring a Competent Person	OSHA Standard	Your Competent Person(s) (If applicable)
General Safety and Health Provisions (All Contractors)	1926.2	
Fall Protection	1926.502	
Excavations	1926.65	
Respiratory Protection (If your work requires PPE)	1926.103	
Rigging for Material Handling (Riggers & Signal Persons)	1926.251	
Cranes (Operators & Assembly/Disassembly Supervisors)	1926.1400	
Scaffolding	1926.451	
Steel Erection: Bolting, Riveting, Fitting Up, and Plumbing Up	1926.752	

Introduction

As the leader in the construction industry, Turner Construction Company (also referred to as Turner) is committed to promoting a proactive safety program, which will lead to the establishment of a positive safety culture among all project employees. Every effort will be made to integrate the use of safe work practices into daily work activities performed by trade contractors and their employees. Our approach is to realize the benefits of Living Injury Free Every Day® (L.I.F.E.). This will be achieved thorough pre-planning and daily vigilance. By planning for safe and efficient production, incidents that may cause suffering to a person or increase cost to the project will be eliminated or minimized.

Project Managers, Superintendents, Assistant/Area Superintendents, Safety Representatives, and Foreman are the key individuals responsible for implementing and maintaining an effective safety program. Each of these individuals must ensure personnel working under their control are provided the tools and knowledge to work safely, and are performing their tasks in a safe manner.

It is the responsibility of each worker to follow every precaution in their Daily Pre-Task Plan to protect them and their fellow workers.

Each subcontractor and lower tier subcontractor is solely responsible for the safety of their employees and/or visitors as required by the rules described in this Program, OSHA requirements, and all local, state, and federally recognized standards and codes.

All contractors and subcontractors are responsible to train and educate their employees, and/or visitors on the contents, requirements and policies contained within this Program.

Project Description

Enter project description and scope.

Key Project Staff

- A. Project Executive – Antonino Adamo
- B. Project Manager – Jose Alday
- C. Procurement Agent – TBD
- D. Project Engineer – TBD
- E. Project Superintendent – Steven Brenson
- F. Business Unit EH&S Director – Gavin Banks
- G. Project EH&S Manager Andres Orozco

Responsibilities

Turner Project Superintendent

- Enforce compliance by all parties the Project Safety Program.
- Assist all Subcontractors in pre-planning their operations to prevent personal injury or property damage to employees and other contractor's employees or to the public.
- Chair the safety meetings.
- Review and enforce the recommendations of the Project Safety Manager pursuant to job safety tours and of the toolbox meeting minutes.
- Conduct periodic safety tours, and submit one (1) SafetyNet audit per week.

Turner Project Safety Manager

- Investigate incidents and direct the elimination of hazardous conditions.
- Evaluate the safety of the project daily and submit at least three (3) SafetyNet inspections per week.
- Gather facts on accidents and thefts for action by the Project Superintendent.
- Periodically attend trade and subcontractor toolbox meetings.

- Distribute and post all safety meeting minutes, safety bulletins and incident data.
- Prepare and distribute minutes of project safety meetings.
- Issue safety bulletins for the project.

Subcontractor Safety Representative and Foreman

All subcontractors must have completed an OSHA 30 hour class. One person must be certified for all contracts under \$5M, and two people must be certified for contracts over \$5M. The 30 hour certified person(s) must be on-site 100% of the time. This OSHA 30 hour certification must be updated through Turner's Safety Update Training every three years through Turner University.

- The Subcontractor shall provide a full time dedicated Safety Manager (non-working) which shall be in constant attendance when its onsite workforce reaches 20 workers, not including office staff, or the Contract is five million (\$5M) or more. Safety Manager shall meet the following requirements
 1. Is qualified to recognize safety hazards; and
 2. Has the authority to take corrective action;
 3. Possesses current certifications in first aid, CPR and AED;
 4. Possesses a recent OSHA 30-hour training completed within the last 3 years (if not within the last three years Turner's 2 year Safety Update Training can be completed through Turner University); and
 5. Has an academic degree in safety or one of the following certifications, CSP, ASP, CHST, STS-C designation and has a minimum 5 years of prior work history as a designated construction safety manager. Turner reserves the right to approve or deny the subcontractor's fulltime safety representatives for the project.
 6. Multiple Safety Managers are required for every additional 50 onsite workers engaged in construction activities after the initial requirement at 20 workers (see table for ratio reference).

Full time dedicated Safety Managers required	When Onsite Workers reaches:
1	20
2	70
3	120
4	170

- Once a contractor has three Foremen, one will be designated as a non-working Foreman with their primary responsibility of acting as the subcontractor safety representative and will not be working with their tools. Additional specific requirements may be identified in a Contractor's scope of work. Generally, if there is a conflict between this document and the scope of work the most stringent will take precedence. The Project Safety Manager and the Business Unit Environmental, Health, and Safety Director reserves the right to evaluate and determine what is best for the safety of the project.

At a minimum the Subcontractor Safety Representative will be required to:

- a) Ensure their employees attend jobsite orientation before start of work on the project.
- b) Take the lead in recognition and abatement of hazardous situations.
- c) Conduct a daily "Safety Huddle" prior to the start of each shift and submit a Daily Pre Task Plan (PTP) Report each morning prior to the start of work.
- d) Perform and document weekly safety inspections (1 per week at minimum).
- e) Conduct at least one monthly safety tour with your Safety Director and submit findings to Turner.

- f) Ensure that Competent Persons submit, at a minimum, the below listed safety inspections at the designated frequency to the Turner Project Superintendent or Project Safety Manager.

Inspection	Frequency
Fall Protection	Before Each Shift
Excavations	Before Each Shift
Scaffold	Before Each Shift
Crane Inspections	Before Each Shift
Confined Space	Before Each Shift
Hot Work	Before Each Shift
Heavy Equipment	Before Each Shift
GFCI	Weekly
Personnel Hoist	Per OSHA Regs.
Dig Permit	Before Each Shift
Tools Box Talks & Report	Weekly

- g) Conduct and document toolbox meetings on a weekly basis.
h) Issue minutes of the weekly toolbox meeting to Turner.
i) Effectively utilize and train employees in pre-planning, recognition, and remediation of hazards.
j) Each subcontractor, regardless of tier, is to submit in writing toolbox meeting minutes containing the following:
(1) Name of subcontractor and date.
(2) Name of Subcontractor Safety Representative.
(3) Name of employees attending.
(4) Name of employees onsite not attending.
(5) Number of employees on their payroll that day.
(6) Subjects discussed.
k) Attend project safety meetings.
l) Enforce disciplinary measures when need arises for their employees.
Note: Gross disregard for policy or procedures, as determined by Turner, can result in immediate removal from the project and a monetary fine.
m) Each subcontractor is responsible for all of their subcontractors and suppliers, regardless of tier, compliance with the Project Safety Program.

Employees / Employers

- n) Perform their work to prevent accidents to themselves, fellow workers, and property.
o) Use Personnel Protection Equipment as required, to meet all Turner, federal, state and local requirements.
p) Alert supervisors to dangerous situations.
q) Cooperate with principles of the Project Site Specific Safety Program.
r) Utilize all tools and equipment in a safe manner and in accordance with manufacturer's recommendations.
s) Complete project safety orientation before starting work on the jobsite.
t) Acknowledge and abide by the project enforcement rules.

Visitors

Any person not directly involved with the onsite construction of this Project must not enter the site without first going to Turner's job office, signing a visitor's release, obtaining a hard hat and safety glasses which is to be returned to Turner. All visitors must adhere to Turner Project Safety Program and be 18 years of age or older.

General Requirements

Employee / Visitor Access

All employees and visitors must satisfy the following drug and orientation provisions before being permitted access to this project site:

1. Employees must produce a drug screen card or similar document as verification of having successfully met the pre-employment requirements contained in the drug program for this project. Those not possessing such can undergo testing at the on-site medical office or designated clinic before reporting for employee orientation. The cost of drug screening test will be at the expense of the subcontractor.
2. Employees must complete the project's safety orientation at which time they will register personal, drug testing, and training information. Employees will be issued a hard hat sticker or equivalent identification upon completion of the orientation process. Identification must be displayed at all times while on the project.
3. Visitors will be required to obtain a visitors pass and be escorted by an assigned employee. All visitors must be properly attired to enter the project site.

Pre-planning

Contractors are required to produce Site Specific Safety Plans and Job Hazard Analyses (JHAs) for each major task they plan to perform. These documents are required to be submitted to Turner at the first pre-construction meeting.

A daily Pre Task Plan (PTP), daily "white board" meeting each day of work on the project.

The JHA and PTP will be used as a primary means of accident prevention. Each work crew is required to review the applicable PTP for their work during the morning huddle with their Foreman, prior to the start of each work shift.

Hazard Communication

As a minimum, the subcontractor shall incorporate all the basic principles of the Project Safety Program into their Safety Program. The above shall also include the subcontractor's Hazard Communications Program with SDS (Safety Data Sheets) to be provided before start of work. Each month subcontractors will provide an updated list of the hazardous materials they have on the project by submitting a Chemical Inventory to the Project Superintendent or Project Safety Manager.

The subcontractor is responsible for maintaining an updated binder of their respective SDSs on the project and will make them immediately available for review upon employee, Turner or any other request.

Safety Data Sheets must be referenced and included in daily PTPs daily huddles as a means of identifying proper personal protective equipment as well as other control measures including spill response and first aid measures. No work is permitted without first having all necessary equipment and controls for the chemical being used on the project.

Fall Protection

All work performed at or above 6 feet will be done in conjunction with fall protection 100% of the time.

At no time shall a Safety Monitor or Attendant be used as a means of fall prevention.

A guardrail system or tie-off system must be used 100% of the time.

When tying off is the means of fall protection, a full body harness must be used.

Each contractor is responsible for protecting its own employees by using conventional means of fall protection such as standard guardrails or perimeter cables. The ongoing maintenance and daily inspection of this protection must also be included. If a contractor's employee cannot be protected by conventional methods, then adequate pre-planning must be conducted to provide for anchorage points capable of withstanding 5000 lbs. in combination with a safety harness and self-retracting lanyard.

Perimeter protection such as guardrails and perimeter cables are not designed to withstand 5000 lbs. of force. Therefore, perimeter protection should never be used as an anchorage point unless it has been designed by a Professional Engineer (PE) to withstand such force.

If flagging is used it must be maintained at least 15 feet from the leading edge for all subcontractors. The warning line height must be between 34" & 39". The rope, wire or chain must have a breaking strength of 500 pounds and must be flagged every 6 feet. After erected, the stanchions must be secured from tipping due to wind, etc.

At a minimum, employees shall follow the manufacturer's recommendations for fall prevention when working from a scissors lift. If scissor lifts are equipped with an attachment point provided by the manufacturer for a restraint system, they are to be used. The intent of this protection is to keep workers within the confines of the passive protective system (rails) so the shortest length of lanyard that allows the task to be completed and keep the worker confined to the walking/working surface is required. Note: These attachment points are not designed as fall protection anchorages. Never climb above the work platform. A dedicated spotter is required any time a scissor lift must be moved in an elevated state. The lift shall be inspected daily & documentation provided to Turner upon request. Each worker operating the lift shall have a training card or documented training.

All floor openings exceeding 2 inches in diameter shall be covered, barricaded, or otherwise protected. Covers shall be designed to withstand twice the weight of workers, equipment, and materials. Covers shall be secured against displacement horizontally and vertically. All covers must be clearly marked with the words "OPENING Do Not Remove."

Each contractor employee exposed to fall hazards must be trained in the recognition of fall hazards, the avoidance of fall hazards, the purpose, use, and requirements of conventional fall protection methods, and the use, inspection, and care of safety harnesses and shock absorbing lanyards.

Since contractors are experts at their specialized trades, they shall provide Turner with their own project-specific Fall Prevention Plan which describes the methods they intend to use to provide adequate fall protection for each contractor's specific operations and to comply with OSHA and Turner's six foot rule.

Guardrails

All cable guardrails must be a minimum ½" diameter. All cable guardrails must be looped connections with three cable clamps on each side of the connection. Open eye turnbuckles are not permitted. Guardrails made of 2x4's shall not have any nails protruding. Guardrails cannot be made of metal studs.

PPE

Subcontractor must provide their employees with all necessary personal protection equipment and tools, and enforce their use as required by the Safety Program, as well as federal, state and local codes and regulations.

Hard Hats/ Safety Glasses

Each Subcontractor shall enforce the wearing of ANSI 289.1-1981 approved hard hats and Eye Protection (ANSI Z87.1) during the total construction of this project, and shall immediately remove anyone from their forces not complying with this requirement.

Aluminum/metal hardhats, Cowboy hats and bump caps are not permitted on Turner Construction Company Projects. Employees exposed to electrical voltages of 600 V or greater shall wear hardhats that meet the requirements of ANSI Z89.2 Type Hardhats.

Prescription glasses must be safety rated and have fixed side shields. Overwrap style safety glasses must be worn when prescription glasses are not safety rated. Safety glasses with side shields that meet the requirements of ANSI Z-87.1 must be worn at all times on the project. During the following operations, face protection in addition to approved safety glasses or goggles are required: welding, burning or cutting, using abrasive wheels, chop saws, portable grinders or files, chipping concrete, stone or metal, drilling or working under dusty conditions, using explosive actuated fastening or nailing tools, overhead work, work with hazardous liquids or gasses. Dark lenses are not to be worn inside of buildings, in enclosed areas or at night.

Clothing & Hi-Vis Vests

All personnel shall wear shirts with sleeves and long trousers.

No shorts or tennis shoes of any kind will be permitted on this project.

High visual, safety vests, shirts or jackets shall be worn as the outermost apparel by all employees, 100% of the time. ANSI Class 2 (0-44 MPH) and Class 3 (45 MPH or more) outerwear must be worn whenever working on or near (within 10 feet) of a roadway.

Foot Protection

At a minimum, safety shoes or boots are required. Safety toe shoes or boots, or toe guards must be worn when using jackhammers, tampers or similar equipment which could be dropped or landed on a worker's toes / feet. Safety shoes or boots must also be worn by masons, drillers, pile driving, steel erectors, and riggers due to the hazards inherent with their work.

Hand and Arm Protection

Employees are required to wear protective gloves 100% of the time

The only exception to this policy is if the competent person determines that the use of protective gloves for a specific activity creates a greater hazard.

Appropriate arm protection is required during operations where the arms are exposed to cut hazards (i.e. Kevlar, Dyneema sleeves, etc.). Examples of these activities are working around metal studs and pull boxes, tight confines as between wall studs or above ceiling and all demo activities. These operations shall be identified on the JHA/PTP.

First Aid and CPR

Each subcontractor must have their own adequate first aid kit and at least one qualified first aid and CPR-trained employee onsite full time. The name of this person, along with copies of their current certification cards, shall be submitted to Turner prior to beginning any work. Upon expiration of such certification, the employee is required to become re-certified.

Lock Out / Tag Out (LOTO)

A Lock Out / Tag Out program must be submitted by any subcontractor performing this type of work, per OSHA standards.

Respiratory Protection

Respiratory protection is required to meet all federal, state and local OSHA regulations. Respirators are to be worn when employees are working with or are exposed to gases, fumes, vapors or dusts above the OSHA-permissible exposure limit (PEL) or when an oxygen-deficient atmosphere exists.

- Respirator users must be trained in use, selection, maintenance, storage and inspection prior to use. It is the responsibility of contractor management to train its employees.
- Respirator users must have a fit test conducted prior to wearing a negative pressure respirator. It is the responsibility of the contractor to conduct the test and to enforce a facial hair policy.

Nothing Hits the Ground

Fabrication

All material fabrication shall be performed at a work station between 30 and 39 inches off the floor.

Work stations shall be mobile and include a fire/debris stop directly behind all chop saws.

Rubbish containers shall be mobile and located directly adjacent to the work station.

The subcontractor is to furnish all mobile rubbish containers for their work.

Housekeeping

All rubbish shall be disposed of as it is generated and be immediately placed in a mobile rubbish container.

Cordless power tools are required unless the subcontractor can demonstrate a hardship or need to use tools with power cords.

The subcontractor is required to elevate off the ground all power cords in order to minimize tripping hazards on walking/working surfaces.

Debris is not allowed to be consolidated on the floor.

Material Handling and Storage

Materials may not be stored within 10 feet of the building perimeter or adjacent to shafts or stairwells.

All material laydown areas must be coordinated and designated by Turner.

Material must be stored to promote mobility of material. Pipes, conduits, metal fabrications and steel framing are to be stored on rolling racks or similar means of conveyance. Bulk material must be palletized to allow for easy mobility using a pallet jack.

“Just in Time” delivery required to minimize clutter. Nothing should be stored on a floor that cannot be installed within one week.

Heavy material such as glass and drywall must be loaded so as not to overload the structure. The subcontractor is required to do a floor loading analysis for submission to Turner PM/ PE for review.

Steel Erection

Fall protection shall be used 6 feet and above in conjunction with 100% positive fall protection. At no time shall a Safety Monitor or Attendant be used as a means of fall protection. A site-specific erection and fall protection plan must be submitted prior to start of erection.

A guardrail system, tie-off system, or netting must be used.

The area below steel erection activities must be barricaded to prevent access by unauthorized personnel.

Guardrail cables of one-half inch wire rope or the equivalent shall be installed at 42 & 21 inches high, around the perimeter of each floor and all interior floor openings during erection. These cables shall be maintained to OSHA requirements by the erector until the erector is offsite. The erector and fabricator are responsible for providing means for erecting cable (i.e. pre-punch columns, angle iron). Toe boards at least 3.5 inches high must be provided and all perimeter cabling must be flagged at 6 foot intervals.

A hoisted steel member shall not be released until it is anchored by at least two bolts at each connection.

Tag lines must be used to control loads.

Multiple lift rigging (“Christmas Treeing”) may be used when limited to a maximum of 3 like members.

Personnel are prohibited from climbing columns, walking on beams, traversing the trusses and sitting on top of columns unless fall protection is provided.

Tools and containers for rivets, bolts or welding rods must be secured to prevent falling.

The erector is responsible to determine if additional plumbing is required, and provide as needed.

The steel fabricator/steel erector will assume all responsibility for adequate lay down and erection site conditions beyond the Site Logistics Plan.

Confined Space

Confined space entry procedures must be submitted and approved by Turner’s BUEHSD or site Safety Manager prior to the start of work where they are required per OSHA standards and /or host facility requirements. The more stringent rule will always apply.

Entering or knowledge of entry into a confined space without all appropriate planning and permits is a zero tolerance issue for Turner Construction and will be dealt with appropriately.

Turner Construction requires onsite rescue services for all permit-required confined spaces. Subcontractors must provide Turner’s BUEHSD or site Safety Manager with rescue service team credentials, which must be approved, prior to entry.

Before beginning work, each contractor must ensure their designated confined space competent person identifies each space, evaluates the space to determine its classification (permit-required,

alternative entry or non-permit-required), and provides appropriate pre-planning documentation including a written confined space program, employee training records, equipment type and service records, rescue provisions, communications, and permitting as applicable.

Turner considers all confined spaces to be permit-required spaces until a competent person can provide Turner with documentation adequate to support alternative or non-permit provisions per Turner's *Confined Spaces in Construction* policy.

All permit-required confined space work will require a mandatory pre-planning meeting with Turner project staff as well as a documented *Project-Specific Confined Space Procedure* that must identify the following, at minimum: Job-specific safety analysis, atmospheric testing, assigned duties, unauthorized entry, rescue equipment and emergency services, entry permit, training, respiratory protection, and hot work safety.

All confined space entries require the use of Turner's Confined Space Entry Permit.

Excavations

Prior to any digging, a facility "Dig" Permit must be obtained and the utility protection services (811) must be contacted. Excavations greater than 4 feet in depth shall utilize protective systems (i.e. trench shields, sloping, benching, or shoring) at all times to protect employees against potential cave-ins. A competent person must be identified and their certification submitted to Turner prior to the start of work. A competent person will be on-site during all excavation work to determine the soil type and its stability by performing one visual and one manual test in accordance with OSHA and submit an Excavation Safety Checklist to the Project Superintendent prior to each shift. All excavations, regardless of depth, will be protected by safety fence, barrier or guardrails.

Ground Fault Circuit Interrupters (GFCI)

All 120-volt single phase 15 & 20-ampere receptacles shall have approved GFCI's.

The electrical contractor must turn in written verification (that they have tested all GFCI receptacles once each month, at minimum.

Temporary Lighting

All temporary lighting shall be run with sheathed multi-conduction wire. No single strand wiring is allowed. Temporary lighting must never be put on the same circuit as temporary or permanent receptacles; temporary lights must be on a dedicated circuit and cannot be used for power.

Temporary lighting must be at least 8' off the ground and provide a minimum of 5 candle feet in each area of the project.

Burning, Welding and Cutting

Hot Work is defined as any work using open flames or sources of heat that could ignite materials in the work area. Examples of hot work are:

- Welding
- Burning
- Brazing
- Propane smoldering
- Oxyacetylene cutting
- Grinding ferrous metals

Before beginning hot work, contact the project superintendent or designated safety personnel to have a Hot Work Permit issued. Permits are issued for the specific job being done, and for a specific time period. The time period is usually for the working shift, but may never exceed twenty-four hours. No hot work is permitted without prior approval from the project superintendent or superintendent designee.

The following precautions must be ensured during all hot work activities:

- 20 pound dry chemical, type ABC fire extinguisher(s) in place.

- Proper PPE is available and utilized.

- Sprinklers are in service.

- Cutting and welding equipment is in good repair.

Precautions within 35 feet of work:

- Flammables and combustibles have been removed from a 35 ft. perimeter of the hot work area.

- Floors are swept clean of combustibles.

- Combustible floors are wet down, covered with damp sand or fire-resistant blankets.

- Flammable liquids removed; other combustibles, if not removed, protected with fire-resistive tarpaulins or metals shields.

- Potential explosive atmosphere has been evaluated and eliminated.

- All wall and floor openings have been protected.

- Fire-resistive tarpaulins suspended beneath work.

Work on Walls or ceilings:

- Construction is noncombustible and without combustible covering or isolation.

- Combustibles moved away from other side of wall.

Work on Enclosed Equipment:

- Enclosed equipment cleaned of all combustibles

- Containers purged of flammable liquids.

Fire Watch:

- Fire Watch will be provided during and for at least 30 minutes after work and during any coffee or lunch breaks.

- Fire Watch is supplied with suitable extinguishers (20 pound, dry chemical, type ABC unless otherwise specified due to project hazards).

- Fire Watch is trained in use of this equipment, in sounding alarm and in emergency evacuation procedures

Misc.

Cylinders shall be secured in an upright position at all times.

Oxygen and acetylene cylinders not in use must be separated by 20' or ½ hour fire rated wall with regulators removed and caps in place.

The welder must wear the welding hood attached to the hard hat. It is not acceptable to wear the hood without the hard hat.

Hearing Protection

Hearing protection must be used to meet OSHA standards, this Safety Program, Federal, State and Local Codes and Regulations. A generalized guideline to follow is if the worker would need to raise his/her voice to communicate in an area or while operating a piece of equipment, hearing protection (muffs or plugs) should be worn. Adequate training must be provided by contractor per OSHA requirements.

General Safety Rules

Horseplay of any kind is absolutely forbidden on the project site.

Do not walk or stand under or beside suspended loads.

When discarding boards, always remove protruding nails or bend them down.

The use, possession, sale, transfer or purchase of alcohol, illegal drugs controlled substances on this project is prohibited.

To the maximum extent permitted by applicable law, the possession on Company premises or while on duty of firearms, clubs, explosives, or other weapons that could be used to cause harm to personnel or property, other than that used to perform specific construction activities, are strictly prohibited.

It is each employee's responsibility to be familiar with emergency safety equipment in the area which they are working.

To prevent impalement of personnel, exposed reinforcing rods and other materials that could cause impalement must be provided with protection such as rebar caps, 2 x 4 lumber, etc. The use of mushroom caps is not permitted for impalement hazards.

Where employees must walk across rebar, temporary walkways must be installed to prevent trip hazards.

Manufacturer requirements/ recommendations for equipment or Turner safety program must be followed (whichever is more stringent).

No headphones, iPods, radios, etc. are permitted on the job.

All tobacco products, smokeless tobacco products, and e-cigarettes (nicotine or no nicotine) are prohibited in all Turner offices, project offices, warehouses, and on projects. The project or office can designate smoking areas that must comply with all ADA, state, and municipal regulations. Certain owners may also have non-smoking policies and Turner employees, subcontractors and visitors will comply with those policies fully.

Man baskets such as those utilized from fork truck type vehicles are not allowed on Turner projects.

Glass containers are not permitted on site.

No hoist shall be placed into service on a Turner project until inspected and the supplemental reports are submitted to Turner.

Wall / Floor Openings

Once a contractor begins his work directly above, below, or within eighteen inches (18") of a floor or perimeter opening, that contractor is to maintain the protection of that opening.

Unmarked Pipes

In renovation and/or alternation work, identification of unmarked pipes must be made prior to any demolition or work being performed.

Public Areas

All work performed in or adjacent to public spaces will be required to have barricades separating the public from the work. Warning signs must be posted to inform the public of hazards. Flagmen are to be provided when necessary. All public areas are to be kept clean/clear of debris at all times.

Safety Meetings

Onsite employees shall attend safety meetings as scheduled by the owner or Turner Construction Company and the time and cost will be the responsibility worker's employer.

1. Weekly Project Safety Meeting, Approximately one (1) hour:

- a. The Project Superintendent/Safety Manager, shall schedule, distribute notification of, and chair the Weekly Safety Meetings, which will be held (day) at approximately (time).
- b. The following persons are required to attend:
All Turner Construction Company Field Staff and Turner Construction Company Foremen. (Union if applicable All Subcontractor's Safety Representatives, Foremen and employees
- c. The following is the quarterly project safety meeting agenda:
 1. Superintendent's observations, remarks, and recommendations regarding the project.
 2. Review weekly project inspections and what corrective action was taken.
 3. Review of insurance carrier surveys.
 4. Future safety planning.
 5. Review of accidents and or near misses.
 6. Open discussion
 7. Safety recognition

2. Weekly Tool Box Talks

- a. Each Subcontractor shall hold a Weekly Toolbox Talk.
- b. Toolbox talks shall be chaired by the Subcontractor's Safety Representative.
- c. Subcontractors Safety Representative MUST SUBMIT the weekly toolbox safety meeting minutes to the Project Safety Manager, by 3pm Friday each week.
- d. The Weekly Toolbox Talk Meeting Minutes shall contain the following:
 1. Name of Subcontractor and date
 2. Name of Subcontractor Safety Representative
 3. Subjects discussed
 4. Safety comments, suggestions from employees
- e. The agenda for these Weekly Toolbox Talks shall be as follows:
 1. Review minutes of monthly Project Safety and Health Meeting as they affect their work.
 2. Instruct employees in the safe and efficient planning and performance of their work.
 3. Discuss the "Weekly Safety Meeting" topic distributed by Turner Construction Company the topic required by the Subcontractor's company, and/or other topics pertinent to Job Safety.
 4. Review accidents, if any that have occurred on this project.

5. Solicit comments and suggestions relating to safety.
6. Conduct Stretch and Flex Daily.

3. Turner Construction Company can request for additional safety meetings In the event:

- a. The Project Safety Manager and/or a Turner Construction Company Staff Member observe unsafe work practice repeatedly being performed.
- b. A Subcontractor's Health and Safety Plan does not appear to be working.
- c. A near-miss, incident or injury incident occurs.

Hand Tools

Inspect all tools before using. Never use defective tools.

Keep hand tools in good condition – sharp, clean, oiled, dressed and not abused.

Keep tools subject to impact (chisels, caulking irons and star drills) dressed to avoid flying spalls from “mushrooming.” Use tool holders.

Do not force tools beyond their capacity or use “cheaters” to increase their capacity.

Do not use tools for pry-bars.

Do not leave tools on scaffolds, ladders or overhead working spaces.

Do not throw tools from one location to another, from one employee to another or drop them to lower levels.

Typical box-cutters and utility-knife type cutters are not allowed on Turner projects. Cutters and knives must have automatic self-closing blade-guards, or, blades that retract into the handle when the blade loses contact with the cutting surface. (i.e. Olfa, Lewis and Martor are brands that make these types of safety cutters).

Portable Power Tools

Portable power tools must not be operated unless the employee is trained in their use.

Electrical power tools must be double insulated or shall be of an approved system that contains three wires with a ground.

Guards or shields must be installed on all power tools before use.

Electrical power tools are not be used in explosive atmospheres unless the tool is approved for service in a hazardous location.

Pneumatic-powered tools are to be secured to the hose by positive means to prevent the tool from becoming accidentally disconnected. Radiator-type hose clamps are not permitted on hoses.

Pneumatic hose sections must be wired together at each coupling connection.

Operators of powder-actuated tools must be authorized, must possess valid credentials, and wear proper personnel protective equipment.

All defective power tools must be taken out of service immediately and tagged defective.

All hammer-drills and rotary hammers must have integrated technology, such as a “safety clutch,” that will stop drill-bit rotation should the bit bind up in the hole. An example of this is Hilti's Anti-torque control (ATC) technology.

Extension Cords

Extension cords must be of the three-wire type with ground plug.

Extension cords and cables must be protected from traffic or sharp corners.

Cords must be kept out of walkways and other areas where they present trip hazards. See “Nothing Hits the Ground.”

Electrical connections, cables, etc. must be kept away from water or damp surfaces.

Inspection and testing of cords shall be performed as required by OSHA.

No flat cords allowed.

Bad cords must be taken out of service and tagged defective and repaired or removed from jobsite.

Equipment

Each contractor employee has the responsibility to inspect equipment before use. Defective equipment must be tagged with a “Defective – Do Not Use” tag and taken out of service.

Know the limitations of the equipment used and do not exceed those limits.

Ladders and Scaffolds

Ladder use on Turner Construction projects will be allowed only when it has been determined by Project Manager and Turner Safety that it is unfeasible to use all other options to complete the task.

If it is determined that a ladder is the only means of performing the job at elevated height, a ladder permit must be submitted prior to starting work. At no time will a ladder be on site without a current permit and safety checklist.

Use of job built ladders is prohibited on Turner Construction Projects. Temporary stair towers or prefabricated stairs shall be used to access different building levels.

Procedures for identifying and responding to all tasks that require the use of a device that allows work from a height:

- Prior to beginning work, the subcontractor or superintendent (for self-perform work) shall evaluate all tasks that require individuals to work at elevated heights. It is the expectation that these tasks will be performed using methods other than a ladder. Use of lifts and portable scaffold devices shall be the preferred method to perform this type of work.

If it is determined that a ladder must be used:

- The subcontractor shall complete the Turner Construction Ladder Use Permit and have it reviewed and approved by the Turner Superintendent.
- Workers must maintain three points of contact at all times when working from a ladder. If this cannot be done, worker must tie off at any height.
- When working at a height of six (6) feet and above, 100% fall protection is required.
- Prior to starting work each shift, The Turner Construction Ladder Safety Inspection Checklist shall be completed affixed to all ladders.
- Prior to using a ladder, the Turner Superintendent will review the Job Hazard Analysis, Pre Task Plan, and Ladder Use Permit.

Scaffolds

All persons and scaffolds are to be built under the supervision of a Competent Person and meet the specifications required by OSHA 100% fall protection at six foot shall be provided regardless of the type of scaffold during all phases of construction.

Lean-to scaffolds are prohibited.

The Competent Person shall inspect scaffolds daily and submit a completed Scaffold Inspection Checklist to the Project Superintendent daily. All scaffolding must have an inspection tag.

All mobile scaffolds must have rails at all heights & the wheels locked when in use.

Scaffolding shall be erected with one of the following: base plates, screw jacks or casters, on sound, rigid footing. Use of concrete block for footing is not permitted.

Scaffolding must be equipped with guardrails at any height.

Cross bracing shall not be used as handrails.

A body harness must be worn and properly tied off on any scaffold platform at six feet in height and not equipped with standard handrails, mid-rails, or decking.

Scaffold planks must extend a minimum of 6" but no more than 12" over the end supports and be of scaffold-grade lumber. All scaffold boards that do not extend over the centerline of their support by at least 6" are to be cleated on each end.

Provide an access for all scaffolds. Climbing the side of scaffolding is not permitted..

Scaffolds must be tied off or stabilized with outriggers when the height is more than three times the smaller dimension of the length or the width. Scaffolds must be tied off horizontally every 30 feet.

Suspended scaffolding, such as swinging stages, boatswain ("bos'n") chairs, floats and needle beams, requires special approval by the Business Unit Environmental, Health, and Safety Director before use.

While using suspended scaffolding, attach and secure a safety harness before stepping on the platform and do not remove it until clear of the scaffold. Tie off to an independent lifeline or building structure. Use one lifeline per person.

Signs, Signals, and Barricades

At locations where potential hazards exist, contractor personnel shall be responsible for posting, installing, and maintaining signs, signals, and barricades to detour the passage of persons or vehicles.

Barricades must be 42 inches high. Barricades shall be kept back six feet from the edge of excavations, holes, platforms, and roofs.

Contractor employees shall obey all signs, signals, and barricades which are posted to warn of potential or existing hazards.

The selection and use of signs and tags shall be in conformance with ANSI requirements.

Red barricade tape is to be used in situation where entry is prohibited or requires special permission. Yellow tape with caution warnings is to be used where entry is allowed as long as the cautions are followed.

Tape of any kind is not permitted for use as fall protection nor swing radius delineation. Leading edge awareness for fall protection must be carnival flags or a hard barrier. The swing radius of cranes and other equipment must be a hard material such as red-colored, plastic chain.

Rigging

Any contractor performing rigging must have a qualified rigger.

If the wire rope sling is missing its identification marking, consistent with the latest ASME B 30.09 standard the sling must be removed from service until the identification markings are reaffixed.

The qualified rigger shall inspect all rigging prior to each shift.

Safety latches must be installed on all hooks (shakeout hooks are an exception).

Do not leave unsecured or unattended suspended loads.

Use softeners when possible, to obtain a "bite" on material being rigged.

Inspect wire rope slings for frays, kinks, and worn spots before each use. Do not exceed safe working capacity.

Inspect fiber rope slings for broken fibers, wear, and deteriorated inner and outer strands prior to use. Do not use fiber rope slings where fumes, vapors, sprays, mist and corrosive chemicals are present. The use of chains is not allowed.

Destroy damaged slings immediately. Except for steel erection, multiple lift rigging ("Christmas Treeing") of any material is prohibited.

Compressed Air

Hoses and coupling must be checked daily before use. All hose couplings must be provided with positive locking device.

Compressed air used for cleaning purposes must not exceed 30 psi. Wear goggles over safety glasses when conducting cleaning.

Hose and coupling connections must be safety-wired together.

Compressed air is not to be used for blowing material off you or others.

Compressor must be equipped with shut off valve.

Power Industrial Trucks and Power-Operated Equipment

Trucks and Automobiles

Jobsite speed limits and other regulatory signs must be obeyed.

Pedestrians always have the right of way.

Seatbelts must be worn at all times when riding in a vehicle equipped with seatbelts.

Riding on the side, on the tailgate, or in the bed of a pickup truck is prohibited.

All vehicles used during a project for contract activities must have reverse signal alarms.

Flaggers and spotters must be provided for cranes and vehicles in congested areas and when backing up. Flaggers must be certified in the jurisdiction where the work is being performed. The worker must have the card on their person when flagging.

Heavy equipment (i.e. dozers, scrapers, back hoes, etc.) shall be inspected by the operator prior to each shift. A completed Equipment Inspection Form shall be submitted to the Project Superintendent daily.

Turner Construction Company prohibits the use of handhelds, including cell phones, Blackberries, iPhones, PDA's, MP3 players (or equivalent), radios, and other listening or communication devices on a Turner jobsite while operating vehicles, repositioning, moving or backing up equipment (lifts, excavators, tractors, dozers, etc.). Construction equipment to include cranes, scissor and aerial lifts, earthmoving, hauling, and excavating equipment, except for radio's when radios are the primary means of controlling the operation of the equipment. The use of a mobile phone while operating any power-industrial trucks or power-industrial equipment is strictly prohibited.

When Loading and unloading materials, equipment, and products from trucks we must have:

- Proper preplanning
- Proper training of the workers
- Selection of the right equipment to load/unload the material or equipment
- Established controlled or restricted access zone for workers around the area
- Engage the driver in the activity.

The driver must be in full view to a forklift operator at all times. All loading or unloading activity must stop if the driver cannot be seen, or needs to enter the exclusion zone to inspect a load. Alternatively, if it is safe to do so, the operation can allow the driver to stay in the truck cab during loading and unloading

Establish a restricted access zone around the truck to prohibit entry into the load/unload area. The zone must be equal to the area needed to load/unload plus ten feet around the entire truck area.

Workers on the ground within the zone should never be on the opposite side of a truck from a forklift while it is loading or unloading material.

Deliveries and on-site storage of material must be assigned and approved in advance by Turner Construction Company.

Vehicle access is limited to company vehicles only which are required for the immediate performance of the work. All vehicles must have company signs and be registered to the company.

Prime Contractors or their Subcontractors must be present to receive material addressed to them. Turner Construction Company will not sign for deliveries to subcontractors or their subcontractors. Subcontractor's traffic control must be provided prior to vehicles entering the property.

Contractor deliveries assigned to Turner Construction Company will be returned.

The main entrance to the project site will be located. Subcontractor parking shall be offsite or as determined by Project Superintendent. Parking around the building will be strictly limited to vehicles carrying tools, equipment and/or materials.

Cranes

All cranes must use anti-two blocking devices, as specified in ANSI B30.5 for each load hoisting line. Cranes must be operated in compliance with OSHA standards and the requirements listed in the Turner Crane Pre-Plan Checklist.

Crane Inspections - Annual certificate of inspection (by a third party) must be on file on site prior to operation of any crane. In addition, the following inspections are required:

Mechanical parts of any crane must be inspected by the operator and given to the Turner Superintendent prior to each shift and monthly.

All Cranes must be inspected by a Third Party Qualified Person after being assembled, whenever any components are modified or repaired, involved in an incident, and annually. If the crane was disassembled then reassembled on site, a third party inspection should be performed and documented after reassembly.

Tower Cranes must be inspected during erecting, climbing (e.g. "jumping") or dismantling activities by a Qualified Person. Additionally a Registered Professional Engineer must verify that the host structure is strong enough to withstand forces imposed on it by braces, anchorages, and supporting floors.

Cranes are to be operated within the design limits specified by the manufacturer.

All crane operators must be certified by an independent testing agency approved by the National Commission for the Certification of Crane Operators. (NCCO)

All Riggers and Signalers are to be "Qualified" riggers and "Qualified" Signal persons.

The rated load capacity of the crane is never to be exceeded.

Rated load capacities, recommended operation speeds, and special hazard warnings or instructions shall be posted conspicuously on all equipment.

All accessible areas within the radius of the counterweight swing must be barricaded to limit access.

Cranes, hoists, boom trucks and derricks shall not be installed or operated within 20' of any power line unless lines have been de-energized and grounded, or other options per OSHA standards are implemented.

Personnel are prohibited from riding on the hook of the "headache" ball.

The use of personnel hoists must be reviewed by Turner Environmental, Health, and Safety Director after subcontractor has proven there is no other practical safer means.

All OSHA requirements must be followed when using personnel baskets.

Outriggers must be fully extended and on firm ground.

Crane inspections must be conducted on equipment per the OSHA standards. These inspections and the competent person are the responsibility of the crane owner and the contractor providing the crane.

The use of a mobile phone while operating a crane is strictly prohibited.

Crane appurtenances that exceed 200 above the ground shall be marked and lighted, unless an exemption is received from the FAA.

Industrial Vehicles

Only vehicles that have previously been approved by the Operations Manager and BU Environmental, Health, and Safety Director for use at its projects may be utilized at the Company projects and must be in compliance with the policy. This policy also applies to vehicles owned and operated by Subcontractors and Subcontractor employees. All vehicles covered under this policy are to be scheduled to Turner's property plant and equipment (contractor's) policy. It is the responsibility of the jobsite accountants to properly report all equipment under this policy.

All vehicles with the following features (in combination) are prohibited from all Turner projects:

- Typically carry one rider;

- Have no rollover protection or seat belts; and

- Have a handlebar similar to a motorcycle for navigation.

These vehicles may be commonly referred to as All-Terrain Vehicles (ATV), Quads, Three Wheelers, or Four Wheelers (or other similar equipment). This prohibition includes vehicles owned by subcontractors as well.

Follow OSHA standards Powered Industrial Trucks, as applicable.

All personal (owned by an individual) All-Terrain Vehicles (ATV's), Quads, Three Wheelers, Four Wheelers, Mules, Gators, or other similar equipment are prohibited on all Turner Projects.

All authorized drivers must complete training as follows:

- Manufacturer requirements (as coordinated through the dealership of the equipment) for the safe operation of the vehicle including use of personal protective equipment, authorized surfaces for operation of the vehicle, weight restrictions, and other operational conditions.

- Follow OSHA standards Powered Industrial Trucks.

- This training shall be written formally into the Project Specific Safety Plan by the project team, approved by the BU Environmental, Health, and Safety Director.

- A documented sign-off for the authorized driver must be a part of the training manual provided with the training.

Subcontractor Injury Reporting Requirements

If an employee is injured:

Provisions shall be made by each Contractor for immediate and proper first aid, and/or doctor treatment, for every work injury.

Turner Construction Company is to be notified immediately any incident, near-miss, property damage and equipment failure.

An accident investigation is to be conducted with a written report of the findings and any photos copied to Turner immediately.

One copy of all Workers' Compensation Accident reports involving Contractor's employees shall be promptly forwarded to Turner Construction Company.

Contractors will be individually responsible to notify Federal, State and local authorities in the event of a death and/or multiple injuries. Notify OSHA within eight hours of fatality or hospitalization.

Total man-hours worked and lost time due to accidents on this project must be submitted to Turner on a monthly basis.

Turner Construction Company's Project Superintendent is to be notified immediately.

Send Public Liability Report to your insurance carrier promptly and forward one copy of the report to Turner Construction Company.

Submit injury statistics to Turner including OSHA 300 log on a monthly basis.

Fire Prevention

Shanties:

Are to be constructed using only fire retardant materials and all glass is to be wire glass. As a minimum, any lumber used in shanty construction shall meet the American Wood Preserves Associations Standard C1, C20, and C27, and shall bear certificates of performance.

All materials shall have a flame spread rating no greater than 25 (ASTM Standard E84) with no evidence of progressive combustion for at least 30 minutes.

All shanties shall be located at least 10 feet from materials which present extraordinary fire hazards.

Each shanty shall have at least one (1) 20# ABC fire extinguisher.

Rubbish shall not be permitted to accumulate within an adjacent area to any shanty.

No oily clothes, oily rags, nor fuels, shall be stored in shanties.

All shanties shall be constructed in such a manner that shanty fire shall cause no damage to permanent construction and installations.

All temporary electric must be in accordance with all existing codes.

Storage of any material within 10 feet of fire hydrants is strictly prohibited.

Work areas shall be monitored on a regular basis to prevent accumulation of material.

No motors or machinery shall be left running during non-working hours except as specifically directed by Turner.

All heating equipment shall have necessary safety devices and shall be wired, piped, and operated according to all applicable codes, rules, and regulations.

All tarps, blankets, and poly shall be of fire retardant material.

Each contractor is required to provide fuel tank containment equal to 110% of tank capacity.

No open burning or fires shall be permitted on site. Anyone doing so is subject to immediate dismissal.

No solid fuel (i.e. coke, etc.) shall be permitted on site.

Standpipe system shall be kept as close as possible to progress of the structure and prevented from freezing.

Fire extinguishers shall be a minimum of 20# ABC type and placed and maintained on the job in conspicuous locations according to OSHA requirements. Fire extinguishers must be affixed in a location to prevent damage from water or other materials. These fire extinguishers shall not be moved or discharged except for fighting a fire. Anyone discharging an extinguisher as a prank will be subject to immediate dismissal. Use of carbon tetrachloride extinguishers is prohibited.

All gas bottles such as propane, oxygen and acetylene shall be properly supported and stored and tied in a vertical position in areas designated by Turner. All stored bottles shall be capped.

All gas bottles in use shall be tied in the vertical position and capped at the end of the working day.

All oxygen and acetylene in use shall be in a proper cart with an attached fire extinguisher.

All "HOT WORK" procedures will be followed.

Fire Response:

Appropriate action is the key to the prevention of loss of life and property damage. This action in the first minute is worth tons of water 10 minutes later.

If a fire occurs, notify the local fire department and Turner immediately.

Evacuate area of fire immediately. Extinguish fire with a non-combustible such as sand or an available fire extinguisher. Only those individuals with adequate training will be permitted to extinguish incipient fires. Those individuals with no training are required to evacuate and proceed to the predetermined meeting area.

5.5 STANDARD FORMS

- 1) Site Specific Chemical Inventory List (Form # 1)
- 2) Equipment Inspection
 - a. Ladder Checklist & Ladder Permit (Form #2A)
 - b. Off-Road Heavy Equipment (Form # 2B)
 - c. Initial Equipment Safety Inspection (Cranes) (Form # 2C)
 - d. Crane Critical Lift (Form #2D)
- 3) Energized Electric Work
 - a. Energized Electric Work Permit (Form # 3A)
 - b. NFPA 70 E Job Briefing and Planning Check List (Form # 3B)
 - c. Work Authorization and Job Safety Analysis (Form # 3C)
- 4) Confine Space (Form # 4)
- 5) Fall Protection (Form #5)
- 6) Injury Log (Form # 6)
- 7) Job Hazard Analysis (Form #7)
- 8) Pre-Task Planning (Form #8)
- 9) Ground Penetration Permit (Form #9)

POSTINGS

Emergency Phone Numbers and Procedures

Emergency Action Site Plan



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STANDARD FORM # 1

Hazardous Chemical Inventory List

Contractor

Project

Start Date

#	Date on Site	Common Name / Chemical Name	Manufacturer	SDS on File
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				



Form 2A

LADDER SAFETY INSPECTION CHECKLIST

Inspector:	A. Date:
B. Site Location:	C. Time:

Instructions:

- 1) Complete Permit on flipside first
- 2) Affix completed inspection tag on all ladders passing inspection
- 3) Tag defective ladders "Out of Service" and discard if beyond repair
- 4) Note deficiencies/corrective actions in Comment section
- 5) Return checklist to Turner Superintendent

- | | | |
|--------------------------|--------------------------|---|
| Y | N | |
| <input type="checkbox"/> | <input type="checkbox"/> | 1. Broken, bent or missing steps, rungs, cleats, or rails? |
| <input type="checkbox"/> | <input type="checkbox"/> | 2. Steps and rungs free of water, grease, oil or other slippery substance? |
| <input type="checkbox"/> | <input type="checkbox"/> | 3. Free of splits, cracks, rust corrosion and dry rot? |
| <input type="checkbox"/> | <input type="checkbox"/> | 4. Free of sharp edges, cuts, burrs, etc.? |
| <input type="checkbox"/> | <input type="checkbox"/> | 5. Loose or bent hinges that can't be fully opened or locked in place? |
| <input type="checkbox"/> | <input type="checkbox"/> | 6. Stable and completely balanced (not shaking or swaying) with all legs resting firmly on the floor? |
| <input type="checkbox"/> | <input type="checkbox"/> | 7. Loose, broken or missing extension locks to ensure safe overlap of extension ladder sections? |
| <input type="checkbox"/> | <input type="checkbox"/> | 8. Damaged or worn non-slip bases, safety feet, wheels or casters? |
| <input type="checkbox"/> | <input type="checkbox"/> | 9. Cross-over ladders have railings and non-slip steps? |
| <input type="checkbox"/> | <input type="checkbox"/> | 10. Weight capacity label attached? Type 1A |
| <input type="checkbox"/> | <input type="checkbox"/> | 11. Other structural defects or operating problems? |

Comments:

LADDER PERMIT

Project: _____ Date: _____

Contractor Company: _____

Area(s) Ladder to be used: _____

Ladder Competent Person: _____

Competent Person Contact #: _____

Consider how work may be accomplished at or from the ground-level to minimize elevated work. Ladders are to only be used where no safer means exists to access elevated areas. Consider the use of scaffolds, aerial and scissor lifts, rolling stairs, etc. as safer alternatives.

Note: If three points of contact cannot be maintained, 100% fall protection is required.

Reason ladder is only option (Note: This must be agreed to and approve by the Turner Superintendent and Safety Manager):

Activity/Task(s) to be performed from ladder:

Type of ladder (check one): ☐ Platform-ladder ☐ Stepladder ☐ Extension
☐ Fixed ☐ Trestle ☐ Other

Ladder weight capacity (300 lbs. min): _____

Ladder Height: _____

Will you be 4' or more above a working surface? ☐ Yes ☐ No

If YES, what specific Fall-Arrest System will you use and what will be your anchor point? (Retractable Device is the only appropriate method of fall protection)

Worker's Name _____ Orientation Sticker # _____

_____	_____
_____	_____
_____	_____

Permit Reviewer (Turner) Print

Date



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Form # 2 B

Initial Equipment Safety Inspection Off-Road Heavy Equipment

INITIAL INSPECTION APRIL 14,

TYPE OF EQUIPMENT _____ MAKE/MODEL _____ OWNER ID # _____

OWNED BY _____ IN USE BY (Co.) _____

OPERATED BY (Name of Operator) _____ EMPLOYER _____

OPERATOR CERTIFIED? [] YES [] NO CERTIFIED BY _____ DATE _____

INSPECTED BY (Print Name) _____ (Sign Name) _____

TITLE _____ EMPLOYER _____

INSPECTED BY (Print Name) _____ (Sign Name) _____

TITLE _____ EMPLOYER _____

Back up alarm is functioning and loud enough for the conditions

		YES	NO	N/A
1	Operator has reviewed charts & manuals and understands safe operating practices			
2	Operator does a Daily Equipment Inspection at the start of the shift			
3	Equipment is in proper condition for street use (turn signals, brake lights, etc.)			
4	Back up alarm is functioning and loud enough for the conditions			
5	Warning horn is functioning and loud enough for the conditions			
6	There is a charged fire extinguisher in the cab			
7	The Cab Glass is without cracks			
8	Steps and seats are in proper condition			
9	Seat belts are provided and they are used			
10	Riders are not permitted where there are no seats with seat belts			
11	Rollover protection is provided			
12	Overhead protection is provided			
13	Protection from flying debris is provided			
14	Adequate lighting is provided for work in low light/dark conditions			
15	Brakes are functioning properly			
16	Beds of dump trucks are equipped with device for locking body in raised position			
17	Tires/tracks are in good condition			
18	Pulleys, belts, gears, chains, and other nip and shear points are adequately guarded			
19	Fuel tanks are located to prevent spills and overflows from hitting hot parts or electrical equipment			
20	Windshield wipers are in good condition			
21	Exhaust is located/directed so as not to endanger workers or obstruct operator's view			
22	Fueling cans used with the equipment are the approved safety type			



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Form # 2 C

Initial Equipment Safety Inspection: Cranes

INITIAL INSPECTION APRIL 14, _____ ANNUAL INSPECTION REPORT EXPIRES _____
TYPE OF EQUIPMENT _____ MAKE/MODEL _____ OWNER ID # _____
OWNED BY _____ IN USE BY (Co.) _____
OPERATED BY (Name of Operator) _____ EMPLOYER _____
OPERATOR CERTIFIED? [] YES [] NO CERTIFIED BY _____ DATE _____
INSPECTED BY (Print Name) _____ (Sign Name) _____
TITLE _____ EMPLOYER _____
INSPECTED BY (Print Name) _____ (Sign Name) _____
TITLE _____ EMPLOYER _____

*Indicates must be verified by and/or submitted to the Turner Safety Manager/Engineer
Items (except #20) marked "NO" must be corrected prior to operation of crane

		YES	NO	N/A
1*	Current "Annual" Inspection Report w/any deficiencies noted as corrected			
2	Operator's Manual			
3*	Daily Operator's Inspections done with Inspection Log up to date			
4	Load Charts			
5*	Chart for hoisting "over the front"			
6	Signal Chart posted			
7	Operator has reviewed charts & manuals and understands capacities and limitations			
8	Functioning "Anti-Two-Block" Device as per ANSI B30.5			
9	Boom Angle Indicator			
10	Leveling Device			
11	Operator Controls legibly marked as to function			
12	FAA Light and/or Flag			
13	Cab Glass intact			
14	Functioning Warning Horn			
15	Charged Fire Extinguisher			
16	Adequate Blocking (min. sq. ft. each float = rated capacity of crane / 5)			
17	Floats positively attached to outrigger rams			
18	Block and/or ball have Capacity Plates and hooks have Safety Latches			
19	Wedge Socket termination is proper & not clipped directly to load line			
20	Will or might be Hoisting Personnel			



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CRITICAL LIFT DOCUMENT FORM

Page 1 of _____

(Form # 2D)

COMPANY: _____

DATE: _____

Critical Lift Check List April 14, of Planned Lift(s): _____ Time of Planned Lift(s): _____

1. Designated Positions

a. Supervisor Responsible for Lift: _____

Qualifications _____

b. Designated Crane Operator: _____

Qualifications: _____

c. Designated Riggers: _____

Qualifications: _____

2. Description of item to be hoisted:

a. Descriptions of item (s) to be hoisted: _____

b. Weight(s) of item(s) to be hoisted: _____

c. Estimate weight(s) of item(s): _____

Estimated by Whom: _____

d. Item(s) weight verified: _____

Confirmed by Whom: _____

e. Dimensions of item(s) to be hoisted: L. _____ W. _____ H. _____

3. Hoisting equipment to be used:

a. Crane: (Make) _____ (Model) _____

Gross Lifting Capacity: _____

b. Headache ball weight: _____ Verified By: _____

- c. Spreader beam(s) weight: _____ Capacity: _____ Verified By: _____
- d. Shackle(s) size: _____ Capacity: _____ Verified By: _____
- e. Nylon Sling size: _____ Capacity: _____ Verified By: _____
- f. Chain Sling size: _____ Capacity: _____ Verified By: _____
- g. Kevlar Belt size: _____ Capacity: _____ Verified By: _____
- h. Other: _____

4 Lift Geometry: See Attached

- a. Crane Position: _____
- b. Height of Lift: _____
- c. Load Radius: _____
- d. Boom Length: _____
- e. Boom Angle: _____
- f. Maximum Load Limits for Range of Lift: _____

Page 2 of _____

5. Environmental Conditions:

- a. Weather: _____ Temp: _____ Wind: _____
- b. Type of ground crane will be set up on, asphalt, Concrete, Dirt: _____

- c. Mats required: _____ How many: _____
- d. Outriggers Required: _____ Crawler Track: _____
- e. Communication source: Two way radios / Hand Signals
- f. Day work: Y or N Night Work: Y or N If yes, type of lighting required: _____
- g. All lifting operations shall cease if the following conditions occur:
LIGHTNING, ICING AND OR WIND SPEEDS IN EXCESS OF 25 MPH

6 Rigging Procedures:

- a. Lifting Points: _____ Factory installed: _____ Field installed: _____
- b. Spreader beam required: Y or N If yes, what size: _____
- c. Sketch of piece lifted and rigging: See Attached

REMARKS & COMMENTS:

The following items must be presented to Turner Construction Company prior to the start of any crane lift:

- a. Certificate of Insurance for outside crane rental service.
- b. Copy of current annual crane inspection certificate.
- c. Copy of operators Certification.

Approved and Accepted By:

Page 3 of _____

Lift Geometry

Page 4 of _____

Sketch of piece lifted and rigging:

Page 5 of _____

Crane position & location.



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(Form # 3A)

ENERGIZED ELECTRIC WORK PERMIT

Part I: TO BE COMPLETED BY THE REQUESTER

- 1) Detailed job description procedure to be used in performing the above described work:

- 2) Description of the Safe Work Practices to be employed:

- 3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage:

Requester/Title _____ Date _____

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS DOING THE WORK:

- 1) Detailed job description procedures to be used in performing the above description work:

- 2) Description of the Safe Work Practices to be employed:

- 3) Results of the Shock Hazard Analysis:
- 4) Determination of Shock Protection Boundaries:
- 5) Results of the Flash Hazard Analysis:
- 6) Determination of the Flash protection Boundary:
- 7) Necessary personal protective equipment to safely perform the assigned task:
- 8) Means employed to restrict the access of unqualified persons from the work area:
- 9) Evidence of completion of a Job Briefing including discussion of any job-specific hazards:
- 10) Do you agree the above described work can be done safely? Yes No (If no, return to requester)

Electrically Qualified Person(s) _____ Date _____

PART III: APPROVAL(s) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

Project Executive _____ Project Safety Manager _____

Project Manager _____ BU EH&S Director _____

Project Superintendent _____ Date _____



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(Form # 3B)

NFPA 70E: Job Briefing and Planning Checklist

Identify

What are the hazards?	Potential for arc flash
What voltage levels are involved?	Unusual work conditions
What skills are required?	Is this a multiple -person project?
"Foreign" voltage source present?	
Notes:	

Ask

Can the equipment be de-energized? Y or N	Is a "standby person" required?
Are there possible back feeds of the circuits to be worked on?	
Notes:	

Check

Job Plans	Safety procedures
One Lines and vendor prints	Vendor information
Status Board and resources.	For up-to-April 14, information on system
Individuals familiar with facility?	
Notes:	

Know

What is the Job?
Communicate!

Who else needs to know?

Who is in charge?

Notes:

Think

The extra eventWhat if?

Use the right tools, equipment and PPE

Lock - Tag - Test - Try

Install barriers and barricades

Test for voltage first.

What else...?

Install and remove grounds

Notes:

Prepare for an Emergency

Who is First Aid/CPR Trained?

Exact work location.

Telephone location?

Shut off in case of emergency.

Fire alarm locations?

Location of emergency equipment.

Confined space rescue available if required?
available?

Is required emergency equipment

Emergency telephone numbers.

Radio communications available?

Fire extinguisher

Notes:



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Work Authorization and Job Safety Analysis (Form # 3C)
for Working on or Near Energized Electrical Circuits

Specific Location: _____

NOTE: All information must be completed before submission

2. Name of Electrical Workers Supervisor: _____
3. Name of Electrical Workers: _____
4. Name of Safety Observer: _____
5. Brief Description of Task to be Performed: _____

6. Description of Voltage and Location of Machine or Equipment: _____

7. Confirmation of Electrical Workers' Training and Qualifications: _____

The employee(s) must have successfully completed formal employer-approved training in the following subjects:

April 14, Completed

- | | | |
|----|-------------------|-------|
| a. | Electrical Safety | _____ |
| b. | Lockout-Tagout | _____ |
| c. | CPR | _____ |
| d. | First Aid | _____ |
| e. | 70E Standards | _____ |

8. Identify the protective clothing or equipment required for the job: Note all equipment must have current test and/or certification.

- a. _____ Safety Glasses and/or Face Shield
- b. _____ Non-Conductive Hard Hats

- c. _____ Certified Rubber Gloves and Leather Protective
 - d. _____ Insulating Sleeves and Aprons
 - e. _____ Dielectric Blanket and Insulated Mats
 - f. _____ Hearing Protection
 - g. _____ Respiratory Equipment
 - h. _____ Insulated Tools
 - i. _____ Other: Cal rated clothing, etc.
9. Job Safety Analysis Form must be produced by the contractor performing the work.
10. Pre-Task Planning Form must be produced by the contractor performing the work with all employees involved sign.
11. Safety Checklist for Live Electrical Work:
- 1. Specific work areas must be cordoned to prevent unauthorized access to the live work area.
 - 2. A minimum of two equally qualified workers must be present when the live work is accomplished.
 - 3. An individual certified in First Aid and CPR shall be immediately available to the area.
 - 4. All persons in the work areas should remove all jewelry.
 - 5. If ladder access is required, only fiberglass ladders are authorized. Although wood ladders are non-conductive the wood ladders are non-conductive that can absorb water and become conductive.
 - 6. If access to the live work is in a wet area, place wood planking or it's equivalence on the floor.
 - 7. Work boots for persons performing the live work should be ANSI approved for electrical work.
 - 8. Insulated gloves worn by workers performing the live work must have a current dielectric test date.
 - 9. All work must comply with OSHA 1926(Subpart K, NEC, 70 E standards and applicable NIOSH Polices.



CONFINED SPACE ENTRY PERMIT

1. LOCATION			DATE		START TIME		FINISH	
2. DESCRIPTION OF TASK								
3. DESCRIPTION OF CONFINED SPACE (AND CS ID# IF APPLIC.)								
DESCRIPTION OF HAZARDS IN THE SPACE (LIST CHEMICAL, PHYSICAL, AND OTHER HAZARDS)								
4. ATMOSPHERIC SAMPLING/MONITORING CONDUCTED BY NAME (Signature)					TITLE			
ATMOSPHERIC MONITORING REQUIRED PRIOR TO AND CONTINUOUSLY DURING PERMIT-ENTRY								
MONITORING INSTRUMENT MANUFACTURER AND MODEL#					LAST FACTORY CALIBRATION DATE:		PRE-ENTRY CALIBRATION INITIAL IF COMPLETED	
SAMPLING RESULTS (ATTACH ADDITIONAL PAGE IF NEEDED)								
MONITOR IN THIS ORDER:	ACCEPTABLE RANGES		RESULT	RESULT	RESULT	RESULT	RESULT	
	MINIMUM	MAXIMUM	q AM q PM	q AM q PM	q AM q PM	q AM q PM	q AM q PM	q AM q PM
1. Oxygen	19.5%	23.5%						
2. Combustible	0%	10% LEL						
3. H2S	0%	5 ppm						
4. Others:	0%	%PPM						
5. Temperature								
NOTE: 1. If levels are outside the acceptable levels specified above, entry is denied until 3 consecutive tests are done - 5 minutes apart, indicate whether with or without mechanical ventilation. 2. If additional space is needed, record sampling results on back.								
5. VENTILATION (REQUIRED IF A POTENTIAL OR ACTUAL ATMOSPHERIC HAZARD EXISTS)								
q NO MECHANICAL VENTILATION REQ'D			q CONTINUOUS MECHANICAL VENTILATION REQ'D					
6. ENGULFMENT HAZARD EARLY WARNING SYSTEM (REQUIRED IF A POTENTIAL FOR ENGULFMENT EXISTS)								
q NO ENGULFMENT HAZARD.			q YES - DESCRIPTION:					
IF YES, DESCRIBE METHOD AND LOCATION TO MONITOR FOR ENGULFMENT HAZARD								
7. EMERGENCY RESCUE PERSONNEL MUST BE ON-SITE DURING ANY PERMIT ENTRY (ALL REQ'S BELOW APPLY)								
q RESCUERS INFORMED OF ALL HAZARDS			q RESCUE PLAN DEVELOPED			q CURRENT 1ST AID/CPR		
q RESCUERS HAVE REQUIRED TRAINING			q NON-ENTRY RESCUE GEAR (TRIPOD, WENCH, AED, ETC)					
q SCBA OR SAR REQ'D WHEN POTENTIAL FOR IDLH ATMOSPHERE EXISTS (PLUS MED CLEARANCE AND FIT TEST TO USE)								
RESCUER NAMES:								
8. PROTECTIVE EQUIPMENT								
q HARNESS W/RETRIEVAL SYSTEM			q FACESHIELD/GOGGLES					
q RESPIRATORY PROTECTION (Specify):			q HEARING PROTECTION					
q SPECIFY COMMUNICATION METHOD			q FIRE EXTINGUISHER					
q COVERALLS OR CHEM CLOTHING			q OTHER:					
q INTRINSICALLY SAFE EQUIP. OR NON-SPARKING TOOLS			q BARRIERS TO PROTECT ENTRANTS FROM CARS/PEDESTRIANS					
9. ISOLATION OF MECHANICAL, ELECTRICAL, PHYSICAL, OR CHEMICAL ENERGY SOURCES - REQ'D FOR ALTERNATE ENTRY								
Measures might include LO/TO, blanking or blinding; removing sections of lines; a double block and bleed system; blocking or disconnecting all mechanical linkages; isolation barriers								
q Not applicable			q Yes (Specify):					
10. HAS SPACE CONTAINED LIQUIDS, GASES OR SOLIDS OF TOXIC, CORROSIVE OR IRRITANT NATURE?								
q No			q Yes If Yes, contact the BUSD prior to entry. Attach SDS to this permit.					
11. NAME(S) OF ATTENDANT								
1			2					
12. NAME(S) OF EMPLOYEE(S) AUTHORIZED TO ENTER								
1			2					
3			4					
13. SPECIAL INSTRUCTIONS/EQUIPMENT								
14. ALTERNATE ENTRY PROCEDURE (allowed when all of the following conditions are met)								
Conditions for Alt Entry:			Alternate Entry Requirements:					
q Physical hazards are eliminated or isolated			q NO Hazardous atmosphere present at anytime; Complete Section 4 & 5 above					
q Continuous forced air ventilation maintains safe air			q Egress points are easily accessible and easily identified					
q Documentation to support above made avail to entrants			q Fall protection system around opening					
			q Safe means of entry (harness, wench, or other applicable, etc.)					
As the competent person, I certify that the space described in section 1 above has been made safe for alternate entry, on the date listed above.								
NAME:			DATE:					
15. RECLASSIFICATION TO NON-PERMIT 1926.1203(g)								
q ALL HAZARDS ELIMINATED OR ISOLATED			q PRE-ENTRY AIR MONITORING CAPTURED ABOVE					
q FORCED AIR DOES NOT CONSTITUTE HAZARD ELIMINATION								
As the competent person, I certify that the space described in section 1 above has been made safe reclassification, on the date listed above.								
NAME:			DATE:					
16. DESIGNATE ENTRY TYPE:								
q PERMIT-REQUIRED			q ALTERNATE-ENTRY			q RECLASSIFIED TO NON-PERMIT		
17. POST-ENTRY DEBRIEF WITH TURNER CONSTRUCTION (REQ'D)								
q REVIEWED HAZARDS CONFRONTED/CREATED			q TURNER SHARED THIS INFO WITH HOST EMPLOYER					
18. PERMIT CANCELLATION								
q ENTRY OPERATION COMPLETED			q FORBIDDEN CONDITION ARISES			q ALTRNATE ENTRY OR NON-PERMIT		

This permit must be completed for "permit-required entries," "alternate entries," and when reclassifying a permit space to "non-permit."
Permit Must be posted at the entry portal of the Confined Space during entry, along with Pre-task Plan.

Send all permits to BUSD after debrief. Maintain this cancelled permit for 1 Year for Confined Space Program Review.



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TURNER CONSTRUCTION COMPANY FALL PROTECTION CHECKLIST

Project Name:

Project #

Subcontractor Name:

Date:

Performed By:

Fall Protection Options for Hazardous Exposures	Look At:	Satisfactory	Unsatisfactory	Non-Applicable	Comments
Working Over Dangerous Equipment: guard rail—	Guard Rails:				
Safety net—personal fall arrest system	Top Rail @ 42"to 45"....Max 3" deflection.....Mid Rail @ 21"....Will withstand 200 Lbs. Force				
Excavations: Guard rails – Fences – Barricades	in any direction...Toe boards required...Wire rope flagged every 6' with high visible tape				
Floor/Roof Openings: Hole covers – guard rails –	Vertical Lifelines:				
Personal fall arrest – fall restraint	Free from knots.....Anchor to support 5000 lbs.				
Formwork & Re-steel:	Independently secured to structure...Line and rope grab inspected daily for wear &				
Personal fall arrest system – positioning system	deformities...Breaking strength of 6000 lbs.....One worker per lifeline				
Hoist Areas: Guard rails	Tie Off:				
Personal fall arrest system – fall restraint system	Mandatory Tie off at 6' or above...No one ties off to wire rope or wood....				
Leading Edge: Guard rails	Harness (ABC) Anchorage, body-wear				
Personal fall arrest system – Fall restraint	Connection used under direction of qualified person...Employees must wear approved				
Over-head Work: Guard rails-safety net-Personal fall arrest system-controlled access zone used only to protect worker below from	and Inspected equipment..."D" ring located between shoulder blades....Leg straps intact...				

"struck by" incidents	No exposure to fall greater than 6' when including lanyard, tie off point expansion, body height,				
Pre-cast Concrete Erection: Guard rails—safety net —	deployment of shock absorber,/and or length of retractable grab point...Lanyard with double				
Personal fall arrest system	locking snap hook, readable mfg's tag, no wear and tear, no ripped stitching...				
Roof Work: Guard rails — safety net —	Is plan in place for recovering an individual who falls?...Self Retracting Lanyards: Inspected daily...				
Personal fall arrest system—fall restraint system—	After fall or misuse, must be inspected by manufacturer and reset with applicable paperwork supplied				
	Holes/Openings:				
Unprotected Sides and Edges: Guard rails— safety net	Coverings secured both vertically and horizontally....required for all openings including				
Personal fall arrest system—fall restraint system	skylights and roof openings...capable of supporting 2 X intended weight				
Ramps, Runways, Walkways: Guard rails—	(workers, lifts, vehicles, etc.)....Must be ¾" plywood minimum or guardrail				
Personal fall arrest system—safety net	Ladders:				
Wall Openings: Guard rails—safety net —	Base level & free from debris.....No one stands on top 2 steps....				
Personal fall arrest system - fall restraint system	To be provided at points of access 18"....Inspected by competent person....				
Scaffolds: Guard rails— personal fall arrest system	Non – conductive.....slip resistant...Job made –cleats 10" to 14" apart and uniform.....				
(If above guardrail system)	4 to 1 lean. Work facing ladder				

Steel Erection: Guard rails— safety net – Personal fall arrest system - fall restraint system	Scaffolding: Set-up: Bases, cross bracing, guard rails, toe boards, mid rails, level, fully planked with scaffold grade planks...Protected from tipping...Fall protection required for erection...Fall protection required at 6' or above...Debris removed daily.... Access provided by “hook –on” ladder, stair tower, ramps, walkways, scaffold stair..... Never overloaded.....Inspected and tag signed off daily by competent person....				
Metal Decking: Guard rails — safety net – Personal fall arrest system - fall restraint system	Material secure and falling object protection with toe boards, catch platforms, canopy structures...Front edge of platform no more than 14” from face.....				
Siding Erection: Guard rails - safety net - personal fall Arrest system	Training required on each type of scaffold worked on				
Glazing & curtain wall: Guard rails - safety net - personal Fall arrest system – fall restraint	Safety Nets: Designed by a professional for each application...Inspected weekly or after an occurrence... Inspection documented...Material removed ASAP....Installed not more than 30' from work area...Mesh size no bigger than 6" X 6"				
Swing stages: Guard rails - safety net - personal Fall arrest system – fall restraint	Safety Monitor System: Turner does NOT recognize a Safety Monitor System under any conditions or circumstances.				
Bosun's chair: Personal fall arrest – fall restraint	Suspended Scaffold: Independent lifelines...Competent person checks connections, anchorage points, and inspects scaffold..... Counter weights secured by mechanical means (no sand bags, masonry units, gravel, rolls of roof felt)..... Suspension ropes inspected by competent person prior to each shift				
Snorkel Lift: Guard rails – personal fall arrest					
General Questions: Are workers empowered to identify hazards and stop work? Are competent persons designated and on site? Is Turner taking disciplinary action on fall protection Offenses? Are Bi-lingual provisions in place & being used? Have all workers completed orientation?					

Have Vendors provided Fall Protection Training?	Aerial Lifts:				
	Tie off required inside boom lift platform per OSHA & Manufacturer's instructions.....				
	Stand firmly in basket.....				
	Inspected by competent person prior to each shift				
	Concrete Work:				
	100% tie off at 6' or above.....Approval for using positioning systems on formwork.....				
	impalement hazards covered				
	Steel Erection, Welding, Bolting, Metal Decking				
	100% tie off at 6' or above.....Erection to minimize connectors coming into				
	contact with swinging members.....Use lifts to connect.....Use tag lines.....				
	Protection system in place when lifting deck.				
Additional Comments:					

Injury Log

Standard Form #6

CONTRACTOR _____ PROJECT _____

MONTH & YEAR _____ F/A=FIRST AID M/O=MEDICAL ONLY L/T=LOST TIME R/T=REFUSED TREATMENT D/T=DRUG TEST

[illegible]



Standard Form #7

Prepared By _____

Falls From Elevation:	Yes	No	Underground Utilities:	Yes	No	Energized Systems/LOTO:	Yes	No
Confined Space(s):	Yes	No	Line Breaking:	Yes	No	Health Hazards:	Yes	No
Respiratory Protection:	Yes	No	High Voltage Work:	Yes	No	Scaffolding/Arial Lifts:	Yes	No
Excavating/Trenching:	Yes	No	Work Permits	Yes	No	Asbestos and/or Lead:	Yes	No
Public Exposure:	Yes	No	MEP Issues:	Yes	No	Hazardous Materials/Waste:	Yes	No
Hot Work:	Yes	No	Cranes/Rigging:	Yes	No	Working Over Water:	Yes	No

[illegible]

Description of Steps to be Performed	Hazards Associated with Each Step	Required to Eliminate or Control the Hazard

Originator

Date

Contractor Superintendent/Engineer

Date

Contractor Superintendent/Engineer

Date

INSTRUCTIONS FOR COMPLETING THE JOB HAZARD ANALYSIS FORM

Job hazard analysis (JHA) is an important accident prevention tool that works by finding hazards and eliminating or minimizing them before the job is performed, and before they have a chance to become accidents. Use JHA for job clarification and hazard awareness, as a guide in new employee training, for periodic contacts and for retraining of senior employees, as a refresher on jobs which run infrequently, as an accident investigation tool, and for informing employees of specific job hazards and protective measures.

Set priorities for doing JHA's: jobs that have a history of many accidents, jobs that have produced disabling injuries, jobs with high potential for disabling injury or death, and new jobs with no accident history.

Select a job to be analyzed. Before filling out this form, consider the following: The purpose of the job--What has to be done? Who has to do it? The activities involved--How is it done?

In summary, to complete this for you should consider the purpose of the job, the activities it involves, and the hazards it presents. If you are not familiar with a particular job or operation, interview an employee who is. In addition, observing an employee performing the job or "walking through" the operation step by step may give additional insight into potential hazards. You may also wish to videotape the job and analyze it. Here's how to do each of the three parts of a Job Hazard Analysis:

Description of Steps To Be Performed	Hazards Associated With Each Step	Required to Eliminate or Control the Hazard
<p>Examining a specific job by breaking it down into a series of steps or tasks, will enable you to discover potential hazards employees may encounter.</p> <p>Each job or operation will consist of a set of steps or tasks. For example, the job might be to move a box from a conveyor in the receiving area to a shelf in the storage area. To determine where a step begins or ends, look for a change of activity or change in direction or movement.</p> <p>Picking up the box from the conveyor and placing it on a hand truck is one step. The next step might be to push the loaded hand truck to the storage area (a change in activity). Moving the boxes from the truck and placing them on the shelf is another step. The final step might be returning the hand truck to the receiving area.</p> <p>Be sure to list all the steps needed to perform the job. Some steps may not be performed each time; an example could be checking the casters on the hand truck. However, if that step is generally part of the job, it should be listed.</p>	<p>A hazard is a potential danger. The purpose of the Job Hazard Analysis is to identify ALL hazards, both those produced by the environment or conditions and those connected with the job procedure.</p> <p>To identify hazards, ask yourself these questions about each step:</p> <p>Is there a danger of the employee striking against, being struck by, or otherwise making injurious contact with an object?</p> <p>Can the employee be caught in, by, or between objects?</p> <p>Is there potential for slipping, tripping, or falling?</p> <p>Could the employee suffer strains from pushing, pulling, lifting, bending, or twisting?</p> <p>Is the environment hazardous to safety and/or health (e.g. toxic gas, vapor, mist, fumes, dust, heat, or radiation)?</p> <p>Close observation and knowledge of the job is important. Examine each step carefully to find and identify hazards -- the actions, conditions, and possibilities that could lead to an accident. Compiling an accurate and complete list of potential hazards will allow you to develop the recommended safe job procedures needed to prevent accidents.</p>	<p>Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the hazards that could lead to an accident, injury, or occupational illness.</p> <p>Begin by trying to: 1) engineer the hazard out; 2) provide guards, safety devices, etc.; 3) provide personal protective equipment; 4) provide job instruction training; 5) maintain good housekeeping; 6) insure good ergonomics (positioning the person in relation to the machine or other elements in such a way as to improve safety).</p> <p>List the recommended safe operating procedures. Begin with an action word. Say exactly what needs to be done to correct the hazard, such as, "lift using your leg muscles". Avoid general statements, such as, "be careful". List the required or recommended personal protective equipment necessary to perform each step of the job.</p> <p>Give a recommended action or procedure for each hazard.</p> <p>Serious hazards should be corrected immediately. The JHA should then be changed to reflect the new conditions.</p> <p>Finally, review your input on all three columns for accuracy and completeness. Determine if the recommended actions or procedures have been put in place. Reevaluate the job hazard analysis as necessary.</p>

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PTP (Pre-Task Planning)**Standard Form #8**

Project: _____ Date: _____ Contractor: _____ Page ____ of ____

Description of Work: _____

Supervisor: _____ Location of Task: _____

Evaluating Your Work Area – Circle Yes or No

Has the competent person performed req'd inspections?	Yes	No	Competent Person Name _____		
Are you working around line systems?	Yes	No	Do you have the required PPE needed for this task?	Yes	No
Does this task require special training?	Yes	No	Are the required materials and tools provided?	Yes	No
Is an SDS review necessary for this task?	Yes	No	Have all tools/equipment been inspected before use?	Yes	No
Is air monitoring required?	Yes	No	Does this task involve a confined space?	Yes	No
Are work permits required for this task?	Yes	No	Should the Safety Dept. be involved in this planning?	Yes	No
Are you familiar with Evacuation routes?	Yes	No	Is there a safety issue that has not been addressed?	Yes	No
Has emergency equipment such as fire extinguishers, eyewash stations, safety showers and phones been located?			Yes	No	
If the work area is congested, has the work plan been coordinated with other crafts?			Yes	No	

Potential Hazard Checklist (place a checkmark if applicable)

<input type="checkbox"/> Caught In/Between	<input type="checkbox"/> Inadequate Access	<input type="checkbox"/> Hazardous Chemicals	<input type="checkbox"/> Falls from Elevations	List PPE Required: _____ _____ _____ _____ _____
<input type="checkbox"/> Thermal Burns	<input type="checkbox"/> High Noise Levels	<input type="checkbox"/> Heat Exhaustion/Stress	<input type="checkbox"/> Confined Spaces	
<input type="checkbox"/> Particles in Eyes	<input type="checkbox"/> Struck By	<input type="checkbox"/> Sharp Objects or Tools	<input type="checkbox"/> Line Breaking	
<input type="checkbox"/> Elevated Work	<input type="checkbox"/> Manual Lifting	<input type="checkbox"/> Radiations	<input type="checkbox"/> Inhalation Hazard	
<input type="checkbox"/> Poor Housekeeping	<input type="checkbox"/> Chemical Spill	<input type="checkbox"/> Excavations	<input type="checkbox"/> Critical Lift	
<input type="checkbox"/> Electrical Shock	<input type="checkbox"/> Plant Operations	<input type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Compressed Gases	
<input type="checkbox"/> Chemical Burns	<input type="checkbox"/> Scaffolding	<input type="checkbox"/> Ladders	<input type="checkbox"/> _____	
<input type="checkbox"/> Fire/Explosion	<input type="checkbox"/> Mobile Equipment	<input type="checkbox"/> Rigging	<input type="checkbox"/> _____	

Description of Steps to be Performed	Hazards Associated with Each Step	Required to Eliminate or Control the Hazard

[illegible]

PTP		
Employee Name	Employee Name	Employee Name

GROUND PENETRATION REQUEST PERMIT

Ground Penetration Request Permit

This request form must be completed and authorized prior to penetrating the ground greater than 6 inches anywhere on site. The contractor disturbing soil is required to contact the locator and review as-builts. J.H.A. **MUST** be submitted prior to commencing all ground-penetrating activities on site. And prior to the start of the work in the field, the supervisor will conduct a Pre-Task Planning meeting with the crew performing the work.

Date: _____

Contractor requesting excavation / surface penetration: _____

1. Name of Superintendent / Foreman _____ Phone _____

Anticipated Dates of Work: _____

Anticipated Hours of Work: _____

Remarks / Clarifications (as necessary) _____

Location of excavation or surface penetration: _____ (attach plan)

Description of Work: _____

Means of disturbing soil (*check one*):

Excavator/Heavy Equip _____ Backhoe _____ Pneumatic Driver (fence posts) _____ Drilling/Auger _____

Motorized Saw _____ Hand Removal (Shovel) _____ Other: _____

Contractor's Proposed Method of Identifying Known Utilities (Circle One)

1. Vacuum Excavating Yes No

2. Ground Penetrating Radar Yes No

3. Hand Excavation Yes No

4. Other Explain : _____

5. Were all known utilities identified? Yes No

If no, which known utilities were not identified and why?

Layout of Proposed or New Work (Circle One)

1. Has the Contractor clearly identified the line of the proposed excavation Yes No

Utility Locate Organizations:

1. Identify organizations that have completed utility locates.

_____ (date / permit)

_____ (date / permit)
_____ (date / permit)

Approved Private Locator Company Name: _____

Method of Locating: _____

GROUND PENETRATION REQUEST PERMIT

Identified Utilities:

Have all known Utilities around the facility been physically located on the ground as applicable? Identify point of origin and point of termination of each line.

a. Power	N/A	Yes	No
b. Control	N/A	Yes	No
c. Grounding	N/A	Yes	No
d. Comm / Data	N/A	Yes	No
e. Water	N/A	Yes	No
f. Sewer	N/A	Yes	No
g. Gas	N/A	Yes	No
h. Other	N/A	Yes	No

Utility Delineation:

Has a ten foot utility channel "five feet on either side of the known utilities" been marked or delineated with snow fence, orange silt fence or the equivalent where the new work crosses the utility to ensure adequate recognition?

Yes No

As Built Reviewed? (*Circle One*) Yes No Date of Drawings/Docs: _____

Documented Safety Preplanning Meeting: Yes No

Are any overhead lines in the area? (*Circle one*): Yes No
If yes, they **MUST** be marked at ground level with signage.

Have the areas beneath the concrete slabs been X-rayed prior to any saw cutting or removal? (*Circle One*) Yes No

Competent Equip Oper. (*Print*): _____ Foreman (*Print*): _____

Spotter Required? (*Circle One*) Yes No

Are there existing utilities in the area described in this request? Yes _____ No _____

IF YES, the areas to be excavated are clearly marked-out and utilities within or near the proposed excavation will be "pot-holed" every 15 feet at a minimum using a vacuum process and protected through backfill operations. If multiple known existing utilities are within or near the proposed excavation, increased potholing will be required as determined on the JHA. Unknown existing utilities may be in the area of the work and excavation shall be done with due diligence, strict adherence to the Job Hazard Analysis (JHA), and awareness to prevent damage to unknown utilities.

CERTIFICATION:

By signing below, I understand that falsifying any part of this request will lead to my immediate dismissal from this project and that my employer will be responsible for any damages incurred as a result of my negligence. I certify that all records of existing utilities in the described area, including but not limited to As-Builts, Mark-Out and Underground Utility Coordination Reports have been examined and ALL KNOWN UTILITIES HAVE BEEN IDENTIFIED AND WILL BE PROTECTED FROM DAMAGE. Employees not aggressively identifying and protecting utilities will be removed from the project.

Subcontractor Superintendent/Foreman: _____

Turner Superintendent: _____

POST IN ALL TRAILERS BY PHONE(S)

Crisis Management/Emergency Action Site Plan

TURNER CONSTRUCTION COMPANY

Project California Market Center

EMERGENCY PHONE NUMBERS

TURNER OFFICE..... TBD
 FIRE/AMBULANCE.....911
 POLICE/SECURITY.....911

EMERGENCY PROCEDURE: NON-EMERGENCY POLICE 877-275-5273

- 1) Radio or call the TURNER Field Office and/or Call Emergency Services. (ES)
- 2) Clearly indicate that you are calling from the TURNER Construction Project at 110 East 9th Stree Los Angeles, CA 90015.
- 3) Give a detailed description of the incident and extent of damage or injury.
- 4) Specify the incident location by area and/or building as indicated on the Emergency Action Site Plan and indicate the best access way.
- 5) Give call back number and/or maintain communication for questions or instructions.
- 6) Direct TWO people to meet the emergency vehicles at the site entrance. Escort ES to the scene of the incident.
- 7) Call TURNER and notify of incident.
- 8) If an evacuation of the site is necessary, notification will be given by radio, word of mouth and/or 3 horn blasts.

Crisis Management/Emergency Action Site Plan

PROJECT Logistics Plan Inserted Here

Section

6

**TURNER RISK MANAGEMENT
CORPORATE ENVIRONMENTAL,
HEALTH AND SAFETY POLICY**

**Substance
Abuse Policy**

THE TURNER CORPORATION

Substance Abuse Policy

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Definitions

- **Adulterated Specimen** – A specimen that contains a substance that is not expected to be present in human urine, or contains a substance expected to be present, but which is at a concentration so high that it is not consistent with human urine, which will obstruct the testing process or results. This type of specimen with a Verified Test Result shall be considered as a Refusal to Test, which is treated the same way as a Positive Test Result.
- **Accident/Incident** – A work-related event which results in personal injury to a Turner Employee or Other Worker or to any other person, damage to property or the workplace, or which could have resulted in personal injury or damage to property or the workplace. An Accident/Incident includes, but is not limited to, any Accident/Incident on Turner Property or at a Turner Facility which results in:
 - a) A fatality;
 - b) Bodily injury requiring a visit to any medical provider;
 - c) Vehicular and/or equipment damage in apparent excess of \$1,000;
 - d) Non-vehicle property damage in apparent excess 1,000; or
 - e) Any work-related event that could have resulted in any of the above.
- **Alternative Program**- An Alternative Program is a substance abuse program administered by an entity other than Turner under procedures equal to or more stringent than this Policy and which has been approved and accepted by Turner, in Turner's sole discretion, as an alternative or reciprocal substance abuse testing program.
- **Alternative Program Administrator** – The individual responsible for drug and alcohol testing and related procedures for all Turner Employees and/or Other Workers covered under an Alternative Program.
- **Annual Screen** – A drug screen which Turner may require of any Turner Employee or Other Worker on a yearly basis in addition to any other screen that was given in the previous twelve month period, subject to requirements and limitations of a collective bargaining agreement, when applicable, but only to the extent of a conflict therein with performing an Annual Screen.
- **Chain of Custody** – The protocol followed when submitting specimens for drug and alcohol testing. This protocol assures that there is no opportunity for contamination or switching of samples. Elements include signed and witnessed forms, sealed and initialed containers, and couriers requiring a receipt.
- **Collection Site** – A place where individuals provide specimens to be analyzed for the presence of alcohol or drugs. This site may or may not be owned and/or operated by the laboratory that actually analyzes the specimen.
- **Confirmatory Test** – When testing for drugs, this is the second analytical procedure performed to confirm the presence of a specific drug/metabolite in a urine specimen. This procedure uses a more sophisticated technique (e.g. Gas Chromatography / Mass Spectrometry, EBT) to ensure reliability and accuracy. With breath testing for alcohol, the Confirmatory Test is conducted on an EBT which has the capability to print out the results, date and time, a sequential test number, and the name and serial number of the testing device.
- **Consent** – Written consent for testing is required for all tests. A Donor will be asked to give written consent immediately prior to submitting a drug or alcohol test.
- **Covered Site** – A particular Turner Project or Turner Facility selected for random testing by a Third Party Provider.
- **Cut-off Level** - A pre-determined amount of drug metabolite, measured in nanograms (ng) per milliliter (ml) of urine, which dictates whether a tested specimen is negative or positive. As to alcohol, a pre-determined amount of blood alcohol content, which dictates whether a tested specimen is negative or positive. For example, a test would be declared positive if the amount of drug/metabolite or blood alcohol content were equal to or above the Cut-Off Level.

- **Designated Jobsite Turner Representative** – A Turner designated employee and/or his or her designees on a particular Turner Project or at a Turner Facility responsible for coordinating drug and alcohol testing and related procedures.
- **Diluted Sample** – A specimen with creatine and specific gravity values that is lower than expected for human urine. This type of test will always be sent with MRO comments stating, “Recollection suggested no fluids three (3) hours prior to test.” A Donor providing a Diluted Sample will be retested within twenty-four (24) hours and in no case more than forty-eight hours after the Diluted Sample was obtained.
- **Donor** – a Turner Employee or Other Worker giving a urine, breath, blood, or saliva (which is only used for alcohol testing) sample for drug or alcohol testing.
- **Medical Review Officer (MRO)** - A licensed physician responsible for receiving laboratory results generated by a substance abuse screening program who has knowledge of substance abuse disorders and who received appropriate medical training to interpret and evaluate a worker's medical history and other relevant biomedical information. The MRO is certified by either the American Association of Medical Review Officers (AAMRO) or the American College of Occupational and Environmental Medicine (ACOEM).
- **Medical Examination** – An examination conducted by a duly licensed medical provider.
- **Negative Test Result** - A negative screening is obtained if: (1) the screen test indicated the absence of legal or Prohibited Substances below the screen limit, or (2) the screen test indicates the presence of legal or Prohibited Substances in excess of the screen limit but the confirming test indicates the absence of legal or Prohibited Substances below the confirming limits
- **Non-Negative Test Result** - An initial drug or alcohol test result that indicates the presence of legal or Prohibited Substances in excess of the screen limit and is subject to a Confirmatory Test.
- **Other Workers** – All other person, not directly employed by Turner, working on a Turner Project, at a Turner Facility, or working on or otherwise engaged in Turner business. This includes all contractors, subcontractors, consultants, construction managers, and their respective employees or agents working on a Turner Project, at a Turner Facility, or while working on or otherwise engaged in Turner business. The term “Other Worker” includes, but is not limited to, craft personnel, management personnel, temporary personnel and/or consultants.
- **Positive Test Result (Alcohol)**- A Positive Test Result (Alcohol) is obtained if a Confirmatory Test indicates the presence of alcohol at or in excess of the Cut-Off Level of 0.04% blood alcohol content.
- **Positive Test Result (Drugs)** - A Positive Test Result (Drugs) is obtained if the MRO has verified that the test results contain a Prohibited Substance(s) at or above the standard Cut-Off Levels of any of the substances tested and for which there is no valid medical or other explanation.
- **Post-Accident/Incident Testing** – A drug or alcohol test which may be conducted following the occurrence of an Accident/Incident.
- **Pre-Employment Drug Testing** – For Turner Employees, a drug and/or alcohol test which may be conducted prior to employment by Turner or prior to admission to a Turner Project. For Other Workers that do not have, in Turner's sole discretion, an acceptable substance abuse testing cards, badges, or proof of Negative Testing Results from the last twelve (12) months provided by the respective Other Worker's employer or trade union, a drug and/or alcohol test which may be conducted prior to beginning any work on a Turner Project, at a Turner Facility, or working on or otherwise engaging in Turner business.
- **Prohibited Substance** - A substance whose use or possession is controlled by federal law but that is not being used or possessed under the supervision of a licensed health care professional in a manner that is consistent with applicable federal, state, and local law.
- **Quick / Instant Test** – A test that is a qualitative one-step immunochromatographic test panel for the detection of Cannabinoids (THC), Opiates, Amphetamines, Cocaine, Phencyclidine (PCP), Barbiturates, Benzodiazepines, Environmental, Health and Safety Policy

Propoxyphene, and Methamphetamines 3, 4-Methylenedioxymethamphetamine drugs and/or their metabolites in human urine. This test provides only a preliminary analytical result. A more specific alternate chemical method must be used in order to obtain a confirmed analytical result. The device used for this Quick / Instant Test includes a Lateral Flow (LATFLO) Adulterant Strip (LFAS) for the visual determination of Specific Gravity, Nitrite, Oxidants, and pH to evaluate human urine specimens for adulteration prior to urine testing for drugs.

- **Random-** A system of drug testing imposed without individualized suspicion that a particular individual is using prohibited substances. Random drug testing consists of unannounced substance abuse screens of particular groups or individuals selected through a neutral randomizing system, subject to requirements and limitations of a collective bargaining agreement, when applicable, but only to the extent of a conflict therein with performing a random test.
- **Refusal to Test** – When a Donor refuses to provide a urine, breath, saliva or (on occasion) blood sample upon reasonable request from Turner or from the Other Worker's employer, based on any circumstances in the "Types of Testing" Section.
- **Reasonable Suspicion-** Reasonable Suspicion of drug or alcohol abuse is based on objective evidence about the Turner Employee's or Other Worker's conduct in the workplace that would cause a reasonable person to believe that the individual is demonstrating signs of impairment. In most cases, the objective evidence giving rise to Reasonable Suspicion will be observed by at least two (2) Turner Employees or Other Workers, but recognizing that in certain circumstances the observation may be made by only one (1) such person. Examples of objective evidence include, but are not limited to, odors, difficulty in maintaining balance, slurred speech, erratic or atypical behavior.
- **Screen or Screening** – The initial drug or alcohol test given to screen out potential substance abusers. After the initial screen, a Confirmatory Test will be performed on any Non-Negative Test Result to verify the initial Screen.
- **Screening For Cause** – Drug or alcohol screen which may be ordered when a Turner Employee's or other Worker's Fitness for Duty is in question or following treatment in a drug or alcohol treatment program.
- **Split Specimen Testing** – When a urine sample is taken for drug screen testing, the specimen is split and one part is used for initial testing and the remainder of the specimen is reserved for additional retesting.
- **Substance Abuse and Mental Health Services Administration (SAMHSA)** - A federal government agency, which certifies substance abuse laboratories.
- **Substance Abuse Administrator** – A Turner designated employee and/or his or her designees responsible for the coordination, implementation and administration of this Policy.
- **Substituted Test** – A Substituted Test is a urine sample with creatine and specific gravity values that are so diminished that they are not consistent with human urine. This could indicate evidence of a substance other than the Donor's urine being substituted for the urine screen. This type of sample with a Verified Test Result shall be considered as a Refusal to Test, which is treated the same way as a Positive Test Result.
- **Third Party Provider** – A neutral third party company engaged by Turner or an approved Alternative Program Administrator to manage drug and alcohol testing and to design and/or implement random selection procedures and systems.
- **Turner Employee** – All persons employed directly by Turner, whether staff, corporate, or trade. This includes employees of Turner at any and all Turner Facilities, including business centers, offices, and construction worksites.
- **Turner Project or Turner Facility** – A project or facility which Turner owns, operates, manages, or over which Turner exercises control, including state, federal or other contracts held by Turner, and to which this Policy applies.
- **Turner Property** – Includes, but not is not limited to, all Turner owned or leased buildings, parking lots, recreation areas, vehicles, equipment, desks, lockers, furnishings, and equipment wherever located. It may also include state property at construction projects over which Turner exercises control.

- **Termination-** In the case of a Turner Employee, Termination shall mean termination of employment by Turner. In the case of Other Workers, Termination shall mean the immediate removal of the Other Worker from the Turner Project or Turner Facility by his or her employer and a ban from working at or on a Turner Project or Turner Facility in any capacity to which this Policy applies until the Other Worker has successfully completed Rehabilitation as describe on Page 18.
- **Verified Positive Test Result** – A test result that was positive on an initial immunoassay test or alcohol test, confirmed by a Confirmatory Test using a Gas Chromatography/Mass Spectrum assay for drugs or EBT device for alcohol, and reviewed and verified by the MRO in accordance with this Policy.
- **Verified Test Result** – A test result that is confirmed by a Confirmatory Test using a Gas Chromatography/Mass Spectrum assay for drugs or EBT device for alcohol, and reviewed and verified by the MRO in accordance with this Policy.
- **Voluntary Assistance** – Any Turner Employee who feels that he or she has a drug, alcohol, or related issue is encouraged to seek professional help. Turner can refer such Turner Employee to seek voluntary professional assistance. Assistance given to the Turner Employee shall be kept strictly confidential.

The Turner Corporation Policy on Substance Abuse (“Policy”)

Importance of Policy to Turner Core Values

To help insure a safe, healthy, and productive work environment for the employees of The Turner Corporation, Turner Construction Company and all Turner subsidiaries (collectively known as “Company” or “Turner”), and other persons on Turner projects or at Turner Facilities, and to protect Company property and ensure efficient operations, Turner has adopted a policy of maintaining a workplace free of drugs and alcohol.

Policy Summary

All Turner Employees and Other Workers are prohibited from using, possessing, distributing, dispensing, manufacturing, or being under the influence of Prohibited Substances and from abusing chemicals, controlled substances, or alcohol while working on a Turner Project, at a Turner Facility, or while working on or otherwise engaged in Turner business. Turner is committed to this Policy on substance abuse to maintain a safe environment for all Turner Employees and Other Workers. This Policy establishes guidelines for acceptable and unacceptable behavior in connection with working on behalf of Turner. Turner will not tolerate substance abuse in violation of this Policy.

Turner reserves the right in its sole discretion to modify, update, and/or replace the Policy's provisions. Furthermore, at all times, Turner remains solely responsible for the interpretation of the Policy's provisions and their applications.

The Policy is intended to comply and be construed in a manner so as not to conflict with applicable laws and regulations governing workplace drug testing and substance abuse policies. If any provision of the Policy or the application thereof to any person or circumstance is held invalid or unenforceable to any extent, the remainder of the Policy and the application of that provision shall remain in full force and effect to the maximum extent permitted by law.

Persons to Whom Policy Applies

This Policy specifically applies to all Turner Employees, Other Workers, and any and all employers of Other Workers working on a Turner Project, at a Turner Facility, or while working on or otherwise engaged in Turner business.

This Policy is non-discriminatory and applies equally to all Turner Employees, Other Workers, and their respective employers, as defined above, working on a Turner Project, at a Turner Facility, or while working on or otherwise engaged in Turner business.

Scope and Application

All persons or entities covered by this policy understand and agree that Alternative Programs may be utilized as required by law, contract, or insurance agreement and they will comply with such other Alternative Programs where applicable.

In Turner's sole discretion, Turner may accept substance abuse testing cards, badges, or proof of Negative Test Results for an Other Worker within the last twelve (12) months that is provided by the respective Other Worker's employer or trade union. All Other Workers reporting to work on a Turner Project, at a Turner Facility, or while working on or otherwise engaged in Turner business, without substance abuse testing cards, badges, or proof of a Negative Test Results (and ID), will not be permitted to work unless and until such proof is demonstrated or such Other Worker has submitted and successfully passed a Pre-Employment Drug Test.

Additionally, Turner will work with any union representing Turner Employees or Other Workers covered by this Policy. Where any issues in this Policy are otherwise covered by a collective bargaining agreement, the collective bargaining agreement takes legal precedence and must be followed.

This Policy includes pre-employment, post-Accident/Incident, reasonable suspicion, re-employment, medical examination, annual and random testing, to the extent permissible by law.

Strict Adherence to Policy Required of Turner Employees, Other Workers and Their Respective Employers

Every Turner Employee and Other Worker is responsible for reviewing and understanding this Policy. As a condition of employment, all Turner Employees must abide by this Policy. With respect to Other Workers, continued work and engagement on Turner Projects is conditioned on strict adherence to this Policy or an acceptable Alternative Program.

Any and all employers of Other Workers must ensure full compliance with any and all aspects of this Policy or an acceptable Alternative Program, including the compliance of their respective employees.

Designation and Responsibilities of the Substance Abuse Administrator

Turner will designate a Substance Abuse Administrator to be responsible for the administration and implementation of this Policy. Among other things, the Substance Abuse Administrator will:

- Have primary responsibility for the coordination, implementation, and administration of this Policy;
- Coordinate all testing with any appropriate Third Party Provider(s);
- Receive the test results from the MRO and notify the Designated Jobsite Turner Representative and Turner's safety personnel of the drug results, and notify the tested Turner Employee or Other Worker and the Other Worker's employer of the results; and
- Assure the reliability and confidentiality of testing processes and procedures.

General Substance Abuse Rules

1. Using, possessing, distributing, dispensing, manufacturing, or being under the influence of Prohibited Substances, and/or abusing chemicals or controlled substances while working on a Turner Project at a Turner Facility, or while working on or otherwise engaged in Turner business, is strictly prohibited.
2. Legally prescribed drugs may be permitted, provided that the drugs are prescribed to the Turner Employee or Other Worker by an authorized medical practitioner for current use by the Turner Employee or Other Worker and provided that such legally prescribed drugs do not prevent the safe performance of such person's essential job functions. Please see "Prescription Drugs" on page 11 for further information.
3. The possession or use of alcohol while working on a Turner Project, at a Turner Facility, or while working on or otherwise engaged in Turner business is prohibited. Turner sponsored or approved meetings/functions are exempt from this rule. However, this does not relieve Turner Employees or Other Workers from possessing or using alcohol responsibly and safely in such situations.

4. Refusing to report for or submit consent to drug or alcohol testing is prohibited and may be treated as if a Positive Test Result had been obtained.
5. Adulteration or Substitution of a test is prohibited and may be treated as if a Positive Test Result had been obtained.

Confidentiality

All substance abuse testing will be performed with concern for each Turner Employee's or Other Worker's personal privacy, dignity, and confidentiality. Each Turner Employee and Other Worker will be required to sign a consent and chain of custody form, assuring proper documentation and accuracy. Turner Employee testing records shall not be maintained in personnel files. Records may be kept in a separate confidential file at Turner's office or at the project level for that particular project. Turner Employees shall have the right to a copy of their drug testing results within a reasonable amount of time following a request. Other Workers shall contact the Substance Abuse Administrator if they wish to have a copy of their drug testing results. All actions taken under this Policy will be confidential and disclosed only to those with a need to know.

Protections Related to Drug Screen Testing

- A formal Chain of Custody will be established for every drug test.
- Initial samples (or a split portion thereof) that test non-negative will be retested for verification with a Confirmatory Test, using the Gas Chromatography/Mass Spectrometry ("GC/MS") test,
- GC/MS Positive Test Results will be communicated to the MRO,
- The MRO will receive the GC/MS Positive Test Results and convey the fact of a Verified Positive Test Result to the Substance Abuse Administrator and to the Donor tested and his or her employer.
- Turner Employees or Other Workers who test positive may, within twenty-four (24) hours of being advised of the results, request a retest of the original split-specimen sample by a different SAMHSA certified laboratory, at the Turner Employee's or Other Worker's expense.
- No drug or alcohol test will be conducted without the Turner Employee's or Other Worker's consent. The Donor shall be required to sign a consent form. Refusal to give consent shall be cause for removal/barring from the Turner Project or Turner Facility and may be treated as if a Positive Test Result had been obtained.

Testing Procedures

Procedures for Drug Screen Testing

Urine specimens will be analyzed for the presence of all or some of the following¹:

- Cannabinoids (Marijuana)²
- Cocaine
- Opiates
- Amphetamines
- Phencyclidine
- Barbiturates
- Benzodiazepenses
- Propoxyphene
- Methadone

The following chart illustrates the Cut-Off Levels for some of the drugs tested:

Drug	EMIT Screen (ng/ml)	GC/MS Confirmation (ng/ml)
Amphetamines	1,000	500
Cannabinoids (Marijuana/THC)	50	15
Cocaine	300	150
Opiates	2,000	2,000
Phencyclidine (PCP)	25	25

Appropriate Cut-Off Levels for all other drugs tested will be determined by the SAMHSA approved laboratory conducting the testing and the Medical Review Officer.

1. Urine drug screen specimens may be collected on-site by a SAMHSA approved laboratory or at an offsite medical facility or clinic. In general, Donors will be permitted to give a urine specimen in privacy and without being observed by collection site personnel. However, a Donor forfeits this right whenever there is a reason to believe that he/she may alter or substitute a specimen.
2. If the Donor does not provide a sufficient amount of urine for a drug test, he/she must drink up to forty (40) ounces of fluid, distributed reasonably through a period of up to three (3) hours, or until the Donor has provided a sufficient urine specimen. If the Donor refuses to make the attempt to provide a new urine specimen or leaves the area where the collections are being done this will be considered a Refusal to Test. If the Donor has not provided a sufficient specimen within three (3) hours of the first attempt. The collector will discontinue the collection and notify the Substance Abuse Administrator and/or Designated Jobsite Turner Representative or Alternative Program Administrator. After consulting with the MRO, the Donor will be directed to obtain within five (5) business days, an evaluation from a licensed physician. If the Donor proves that he or she has a medical condition that has, or with a high degree of probability could have precluded the Donor from providing a sufficient amount of urine, the MRO will mark the test as "Cancelled" and no further action will be taken. A medical condition includes an ascertainable physiological condition (e.g., a urinary system dysfunction) or a medically documented

¹ Turner reserves the right to add additional drugs to this list upon notice and consent of the Turner Employee or Other Worker being tested.

² Turner is aware that certain states/localities have decriminalized (or may do so in the future) the possession of marijuana for recreational and/or medicinal use. In light of the forgoing, Turner wants to make it clear that any changes to state or local laws regarding the recreational or medicinal use of marijuana will have no bearing on the Policy. Marijuana — whether used for medicinal or recreational purposes — continues to be an illegal drug under federal law and a Prohibited Substance under the Policy. As such, any worker who tests positive for marijuana above the standard cut-off level will be subject to the consequences of a positive drug test result pursuant to the Policy. Turner remains committed to its Policy in order to maintain a safe and productive workplace environment for all workers on its jobsites.

pre-existing psychological disorder, but does not include unsupported assertions of “situational anxiety” or dehydration. If there is not an adequate basis for determining that a medical condition has, or with a high degree of probability could have, precluded the Donor from providing a sufficient amount of urine, the MRO will mark the test as Refusal to Test.

3. Turner Employees and Other Workers will be preliminarily tested using the Quick/Instant Test Drug Test. This system provides results in five (5) minutes.
4. A SAMHSA approved laboratory will confirm screens that test non-negative. All urine samples will be split-specimen tests, ensuring that any required or requested retests can be done using the original sample. A Confirmatory Test will use GC/MS to ensure reliability and accuracy.
5. Before a Donor’s test result will be confirmed positive for drugs, the Donor will be given the opportunity to speak with Turner MRO and bear the burden of proof that there was a legitimate medical explanation for the Positive Test Result. If the MRO determines that a legitimate medical reason does exist, the test result will be reported as a Negative Test Result. If the MRO determines that a legitimate medical reason that does exist, the test result will be reported as a Negative Test Result. If the MRO determines that a legitimate medical reason does not exist, the test result will be reported as a Verified Positive Test Result. A Positive Test Result will not be reported to Turner until the Confirmatory Test has been completed and the MRO has consulted with the Turner Employee or Other Worker regarding any legitimate medical explanations. Since the Policy is first and foremost concerned with the safety, the Donor whose results are pending will not be allowed to work at a Turner Project or Turner Facility until this process is complete.
6. Diluted Samples occur when a Donor drinks large amounts of fluids before the drug test, or adds water to the specimen so that it is harder to detect drug abuse. Donors may innocently drink too many fluids before the drug test in order to be able to give a sample. This can be avoided by the Donor not drinking more than twenty-four (24) ounces within three (3) hours of the drug test. It is the responsibility of the Donor to provide Turner with an undiluted sample that can be tested. Turner’s Policy regarding Diluted Samples is to retest the Donor one (1) additional time. Ideally, the Turner Employee or Other Worker should be retested within twenty-four (24) hours of receiving the results from the MRO, and in no case more than forty-eight (48) hours after the Diluted Sample was obtained, if the Donor provides a second Diluted Sample, the MRO will conduct a medical interview with the Donor. During the interview process, if it is determined that there is no legitimate medical reason; the Donor’s test will be treated as a Positive Test Result.
7. A Verified Positive Test Result shall mean that the verified results are above standard Cut-Off Levels and that there is not a medically valid reason for the result. Any Turner Employee or Other Worker who tests positive for drugs, and who believes the test results are incorrect, may request a test of the original specimen at his/her own cost within twenty-four (24) hours. An equally qualified laboratory shall perform the retest. If the retest is negative and it is determined by the MRO that the initial confirmation screen was incorrect, the Turner Employee or Other Worker shall be allowed to resume work.
8. If the Confirmatory Test or retest for drugs is negative, Turner shall pay the Turner Employee for any lost time that may have occurred and reimburse the Turner Employee for the cost of a negative retest that was borne by the Turner Employee. The employer of an Other Worker whose Confirmatory Test or retest for drugs is negative shall be responsible for paying the Other Worker for any lost time that may have occurred and/or for reimbursing the Other Worker for the cost of a negative retest that was borne by the Other Worker.
9. Turner Employees who are removed from working on a Turner project, at a Turner Facility, or from working on or otherwise engaging in Turner business following a Verified Positive Test Result, may only be returned to work if certain criteria are met (as outlined below in the “Possible Re-Employment with Turner” Section). In all cases, there is no guarantee of re-employment.

Procedures for Alcohol Testing

1. A Department of Transportation (DOT) approved saliva testing device or “collect-only” device will be used for the initial alcohol screen. In cases where a saliva testing device is used for initial alcohol screen, a “hand held” Breathalyzer unit or equivalent device, similar to those used by law enforcement for field sobriety tests must be used for the Confirmatory Test. If a “collect-only” device is used, the sample will be collected and delivered to a SAMHSA approved laboratory for testing. A Confirmatory Test is not required if a “collect-only” device is used. Saliva or alcohol screen collections by breath or their equivalent may be performed on-site. When using a saliva testing device, any initial screens at or in excess of 0.02% blood alcohol content will be tested with a Confirmatory Test performed after a waiting period of at least fifteen (15) minutes, but

not more than thirty (30) minutes. A SAMHSA approved laboratory will confirm on-site screens that test non-negative with a Confirmatory Test using an EBT that has the ability to print out the results, date and time, a sequential test number, and the name and serial number of the testing device. Any laboratory test from a “collect-only” device sample or Confirmatory Tests at or in excess of 0.04% blood alcohol content will be considered a Positive Test Result (Alcohol). A laboratory test from a “collect-only” device sample or Confirmatory Test at or above 0.02% but below 0.04% will not be considered either a Negative Test Result nor a Positive Test Result (Alcohol), however, the Donor will be suspended from safety-sensitive functions for at least twenty-four (24) hours following administration of the test.

2. Before a Donor's test result will be confirmed as a Positive Test Result (Alcohol), the Donor will be given the opportunity to speak with Turner's MRO and bear the burden of proof that there was a legitimate medical explanation for the Positive Test Result (Alcohol). If the MRO determines that a legitimate medical reason does exist, the test result will be reported as a Negative Test Result. If the MRO determines that a legitimate medical reason does not exist, the test result will be reported as a Verified Positive Test Result. A Positive Test Result (Alcohol) will not be reported to Turner until the laboratory test from a “collect-only” device sample or Confirmatory Test has been completed and the MRO has consulted with the Donor regarding any legitimate medical explanations. Since the Policy is first and foremost concerned with safety, the Donor whose results are pending will not be allowed on-site until this process is complete.
3. A Positive Test Result (Alcohol) shall mean alcohol levels are recognized as demonstrating alcohol intoxication at or in excess of 0.04% blood alcohol content. Any Turner Employee or Other Worker who tests positive for alcohol, and who believes the test results are incorrect, may request a retest of the original specimen of saliva at his/her own cost within twenty-four (24) hours. An equally qualified laboratory shall perform the retest. If the retest is negative, the MRO will review all data for a final determination. If it is determined that the initial confirmation screen was incorrect, the Donor shall be allowed to resume work.
4. If the Confirmatory Test or retest for alcohol is negative, Turner shall pay Turner Employee for any lost time that may have occurred any reimburse the Turner Employee for the cost of a negative retest that was borne by the Turner Employee. The employer of an Other Worker whose Confirmatory Test or retest is negative shall be responsible for paying the Other Worker for any lost time that may have occurred and/or for reimbursing the Other Worker for the cost of a negative retest that was borne by the Other Worker.
5. Turner Employees or Other Workers who are removed from working on a Turner project, at a Turner Facility, or from working on or otherwise engaging in Turner business following a Verified Positive Test Result, may only be returned to work if certain criteria are met **(as outlined below in the “Possible Re-Employment with Turner” Section)**. In all cases, there is no guarantee of re-employment.

Cost of Testing

Turner will pay the cost of the initial screen and Confirmatory Test for testing Tuner Employees under this Policy. The employers of Other Workers are responsible for the cost of screening and confirmation required under this Policy.

Refusal to Consent or Submit to/Report for Test When Directed

Any Turner Employee who refuses to sign a consent form and/or to submit to or report to a drug or alcohol screening test will be immediately removed from the Turner Project or Turner Facility and will be terminated, with no possibility or reemployment. Other Workers who refuse to sign a consent form and/or to submit to or report to a drug or alcohol screening test will be immediately removed by their employer from the Turner Project or Turner Facility, and will further be barred from any subsequent work on Turner Projects or at Turner Facilities.

Prescription Drugs

Reporting to and being at work under the influence of prescribed or over-the-counter drugs, where such use prevents a Turner Employee or Other Worker from performing his or her essential job functions, or poses a safety risk to him or her and/or other Turner Employees or Other Workers property, or which has the potential to cause an Accident/Incident, is prohibited. Turner Employees or Other Workers taking a prescription or over-the-counter drug are personally responsible for confirming with their physicians that they may safely perform any job duties while taking such items. Turner Employees or Other Workers taking a legal substance that could impair their safe work must advise their immediate supervisor.

Types of Testing

To the extent consistent with applicable federal, state and local laws and applicable collective bargaining agreements, a Turner Employee or Other Worker may be required to undergo a screening test for the use of Prohibited Substances and non-prescription drugs, or alcohol under any of the following (or other) circumstances which may be determined by Turner management in its sole discretion under this Policy:

1. Pre-employment – After a conditional offer of employment or prior to admission to a Turner Project. All potential Turner Employees will be tested after a conditional offer of employment but prior to the employment commencing. Potential Turner Employees who obtain a Positive Test Result will not be permitted to work on Turner Projects, at Turner Facilities, or otherwise engage in Turner business and the conditional offer of employment will be rescinded and such potential Turner Employees will not subsequently be considered for any other Turner employment opportunities. If a former Turner Employee returns to employment with Turner following an absence longer than one (1) year, Turner will retest such Turner Employee with pre-employment testing prior to the re-employment commencing (former Turner Employees who are re-employed following a violation of this Policy and rehabilitation, however will be tested as outlined on page 12 in “Re-Employment” Testing). All Other Workers will be tested at their employer(s) expense prior to beginning any work on a Turner Project, at a Turner Facility, or working on or otherwise engaging in Turner business. However, during orientation/training, Turner may accept, from Other Workers, substance abuse testing cards, badges, or proof of Negative Testing Results from the last twelve (12) months provided by the respective Other Worker’s employer or trade union.
2. Post-Accident/Incident – When a Turner Employee or Other Worker is involved in an Accident/Incident (as defined above in “Definitions”). If the Turner Employee or Other Worker is treated in a medical facility which fails to collect a specimen for testing, Turner may require the Turner Employee or Other Worker to be tested within thirty-two (32) hours of the event. A Positive Test Result may result in the denial of Workers’ Compensation for an injury resulting from the Accident/Incident.
3. Reasonable Suspicion – When there is reasonable suspicion, satisfactory to Turner, to believe that a Turner Employee or Other Worker is using, possessing, distributing, dispensing, manufacturing, or is under the influence of Prohibited Substances or abusing chemicals, controlled substances, or alcohol while working on a Turner Project, at a Turner facility, or while working on or otherwise engaged I Turner business, or when there is reasonable suspicion satisfactory to Turner to believe that the Turner Employee or Other Worker has reported to work under the influence of Prohibited Substances, unauthorized controlled substances, alcohol or other intoxicants which could affect the safety of others or of property.
4. Medical Examination – As part of any medical examination or fitness for duty examination provided or required by Turner.
5. Re-Employment – Upon re-employment or re-instatement to a Turner Project, at a Turner Facility, or to work on Turner business following a violation of this Policy and rehabilitation as outlined on page 17 in “Possible Re-Employment with Turner.” Further testing will occur without prior notice for a period of eighteen (18) months following re-employment or re-instatement.
6. Annual – When Turner requires screening on a yearly basis.
7. As needed – As required by Turner/Owner Agreements, other applicable agreements, contractual obligation or government regulation.
8. Random – Turner will conduct Random Testing as follows:
 - All random selections and test processing will be administered by the Third Party Provider(s) selected by Turner.
 - Random Testing will be conducted at a predetermined frequency, to be reasonably spaced throughout the calendar year. At least five percent (5%) of Turner Employee will undergo Random Testing on an annual basis.
 - Except to the extent a Turner Project or Turner Facility is otherwise subject to an acceptable or negotiated Alternative Program, all Turner Projects and/or Turner Facilities will be eligible for Random Testing each time Random Testing occurs, regardless of having been selected previously. However, when applicable, the terms of a state, federal, or owner contract regarding frequency of testing and percentage to be tested will control.
 - All eligible Turner Projects and Turner Facilities will be assigned to testing pools distinguished by job-type criteria agreed upon by Turner. Subject to applicable terms of a state, federal, or owner contract regarding frequency of testing and percentage to be tested, the Third Party Provider’s computerized program will randomly select five percent (5%) of the eligible Turner Projects and Turner Facilities in each group or pool to be Covered Sites. When a selection occurs, the Turner Projects or Turner Facilities that are available for selection will be put on a run list. At the time of selection, the Third Party Provider shall notify the applicable Substance Abuse Administrator(s) and Turner safety director(s) of the selected Covered Sites.
 - Included in the testing pools will be all Turner Employees and Other Workers on any Covered Site. Subject to applicable terms of a state, federal, or owner contract regarding frequency of testing and percentage to be tested, the Third Party

Provider's computerized program will randomly select ten percent (10%) of all Turner Employees and Other Workers currently working on each of the Covered Sites as "Primary Random Selections". Subject to applicable terms of a state, federal, or owner contract regarding frequency of testing and percentage to be tested, the Third Party Provider's computerized program will randomly select and assign a random number to an additional ten percent (10%) of all Turner Employees and Other Workers currently working on each of the Covered Sites as "Secondary Random Selections". The selected lists will be managed by the Third Party Provider and the Substance Abuse Administrator.

- The Third Party Provider will schedule an on-site collector to be dispatched to the selected Covered Site on the arranged date and time, unannounced to the personnel at each of the Covered Site selected. All available Primary Random Selections at the Covered Site are subject to testing at the date and time of the scheduled random testing. Each Turner Employee or Other Worker that is a Primary Random Selection but is not present at the selected Covered Site for any legitimate business reason (e.g., vacation, illness, business travel, etc.) will be considered unavailable for testing and will be replaced, for Random Testing purposes, with a Secondary Random Selection having the lowest randomly generated number.

Company Provided Education and Training

General Provisions

In conjunction with its commitment to a drug free workplace, Turner will provide education to all Turner Employees. This education will cover substance abuse issues and is intended to help reduce the risk of Accidents/Incidents caused by drugs and/or alcohol. Turner's supervisors will receive additional training which will help them identify and help employees who show signs of alcohol or drug use. Employers of Other Workers shall provide such education and training for their employees as may be required by applicable laws, ordinances or statutes mandated by the local, state or federal government

Penalties

Violation of any of the rules associated with this Policy may result in disciplinary action up to and including termination of employment for Turner Employees or the future inability to work on Turner Projects or Turner Business for Other Workers. The following penalties exist for violation of this Policy:

Violation	First Offense	Second Offense
Possession	Turner Employees- Immediate removal from Turner Project or Turner Facility and termination, with no possibility or re-employment.	N/A.
	Other Workers-Immediate removal from Turner Project or Turner Facility by the Other Worker's employer. Barred from any subsequent work on Turner Projects of at Turner Facilities.	N/A.
Distribution of drugs/paraphernalia	Turner Employees-Immediate removal from Turner Project or Turner Facility and termination, with no possibility or re-employment.	N/A.
	Other Workers – Immediate removal from Turner Project or Turner Facility by the Other Worker's employer. Barred from any subsequent work on Turner Projects or at Turner Facilities.	N/A.
Use of Prohibited Substances or Alcohol Abuse (Upon discovery via actions or testing)	Turner Employee - Immediate removal from Turner Project or Turner Facility and termination. Possible re-employment upon proof of successful rehabilitation and re-employment testing. Clean screen required prior to re-employment and continued testing over the eighteen (18) months following re-instatement.	Termination, with no possibility of re-employment.
	Other Workers - Immediate removal from Turner Project or Tuner Facility by the Other Worker's employer. Barred from any subsequent work on Turner Projects or at Turner Facilities until Turner is provided proof of successful rehabilitation and pre-employment testing. . Turner does not provide Employee Assistance to Other Workers. Other Workers must approach their respective employers.	N/A.
Violation	First Offense	Second Offense

Use of Prohibited Substances or Alcohol Abuse (Per voluntary request by Turner Employee for help)	Turner Employee - Immediate removal from Turner Project or Turner Facility. Re-instatement upon proof of successful rehabilitation and re-employment testing. Clean screen required prior to returning to work and continued testing over the eighteen (18) months following the return to work.	Termination with no possibility of re-employment.
	Other Workers - N/A	N/A.
Under the Influence of Prohibited Substances or Alcohol at Work	Turner Employee - Immediate removal from Turner Project or Turner Facility and termination. Possible re-employment upon proof of successful rehabilitation and re-employment testing. Clean screen required prior to reinstatement and continued testing over the eighteen (18) months following reinstatement.	Termination, with no possibility of re-employment.
	Other Workers - Immediate removal from Turner Project or Turner Facility by the Other Worker's employer, Barred from any subsequent work on Turner Projects or at Turner Facilities until Turner is provided proof of successful rehabilitation and pre-employment testing. . Turner does not provide Employee Assistance to Other Workers must approach their respective employers.	N/A.
Failure to Report Use of Over the Counter Prescription Drugs Which Affect Performance	Turner Employees-Discipline, up to and including termination, with or without the possibility of re-employment.	Termination, with no possibility of re-employment.
	Other Workers - Immediate removal from Turner Project or Turner Facility by the Other Worker's employer. In Turner's sole discretion, Other Worker may be required to provide proof of successful rehabilitation and pre-employment testing prior to any subsequent work on Turner Projects or at Turner Facilities. Turner does not provide Employee Assistance to Other Workers must approach their respective employers.	N/A
Violation	First Offense	Second Offense

Positive Test Following Accident/Incident	Turner Employee - Immediate removal from Turner Project or Turner Facility and termination. Possible re-employment upon proof of successful rehabilitation and re-employment testing. Clean screen required prior to reinstatement and continued testing over the eighteen (18) months following reinstatement. May be ineligible for Worker's Compensation.	Termination with no possibility of re-employment.
	Other Workers - Immediate removal from Turner Project or Turner Facility by the Other Worker's employer, Barred from any subsequent work on Turner Projects or at Turner Facilities until Turner is provided proof of successful rehabilitation and pre-employment testing. Turner does not provide Employee Assistance to Other Workers; they must approach their respective employers.	N/A.
Refusal to Consent or Submit to/Report for Test When Directed	Turner Employee - Immediate removal from Turner Project or Turner Facility and termination, with no possibility of re-employment.	N/A.
	Other Workers - Immediate removal from Turner Project or Turner Facility by Other Worker's employer. Barred from any subsequent work on Turner Projects or at a Turner Facility.	N/A.

Notwithstanding the stated penalties, Turner reserves the right to discipline, up to and including termination, any Turner Employee and/or to ban Other Workers from any Turner Project and/or Turner Facility. Nothing herein in any way grants or confers any implied contractual right to any individual with respect to employment with Turner or alters any employment at-will status of a Turner Employee.

Notification of Authorities

In addition to all other remedies or penalties, Turner may report information concerning possession or distribution of any Prohibited Substance or unauthorized controlled substances to law enforcement officials will cooperate fully in the prosecution and/or conviction of any violators of the law.

Employees Convicted of Drug Offenses

Turner Employees or Other Workers must, as a condition of continued employment, notify their "Operations Manager" or employer, respectively, of any conviction of a criminal drug offense within five (5) days after said conviction. IF an employer is notified, then that employer shall notify the Turner Operations Manager immediately. If the Turner Employee or Other Worker convicted of the criminal drug offense is working on federal contract or grant, Turner will notify the Federal Contracting Agency of criminal drug convictions within thirty (30) days after Turner has received notice. Any Turner Employee or Other Worker so convicted must satisfactorily complete a Turner approved drug rehabilitation program and agree to periodic testing any time thereafter, before Re-Employment or a lift on a ban from working the federal contract will be considered. *Failure to report such a conviction and/or participate in a drug rehabilitation program may result in disciplinary action, up to and including, suspension, barring, and/or termination.*

Employee Assistance Program: Rehabilitation and Treatment

Turner is committed to helping Turner Employees who seek help from Turner for substance or alcohol abuse problems prior to any drug/alcohol testing or Accidents/Incidents.

Any Turner Employee who feels that he or she has a drug or alcohol related problem is encouraged to seek professional help. If a Turner Employee voluntarily notifies a supervisor or manager before testing that he or she may have a drug or alcohol problem, Turner will counsel the Turner Employee voluntarily seeking such help. Such person will be provided with a list of employee assistance vendors. Any such action by a Turner Employee shall be kept strictly confidential.

In certain circumstances, Turner Employees who have violated this Policy may also be referred to Turner's Employee Assistance Program ("EAP") and be eligible for a leave of absence and re-instatement (for those Turner Employees who have voluntarily requested help from Turner for the use of Prohibited Substances or alcohol abuse). Further details regarding the EAP may be found in Turner's Summary Plan Description ("SPD") or by visiting www.turnerbenefits.com and clicking on "Plan Details." In addition, a Turner Employee may contact the EAP directly by dialing 1-877-887-6266 and following the instructions.

Please refer to the Penalties Chart on pages 14-16 for the consequences and re-instatement and re-employment rights for various drug and alcohol violations.

If treatment necessitates a leave of absence, accrued vacation, sick leave time, and/or an unpaid leave of absence may be used, pursuant to the limitations of those respective policies.

Other Workers are not eligible for Turner's EAP. Such a benefit may be provided by Other Worker's respective employers.

Possible Re-Employment with Turner

Employment with Turner is an at-will employment relationship. There is never a guarantee of re-employment with Turner.

Turner Employees who are terminated from working on a Turner Project or at Turner Facility following certain Violations, including Use of Prohibited Substances or Alcohol (Upon discovery via actions or testing), Use of Prohibited Substances or Alcohol (Per voluntary request by Turner for help), Under the Influence of Prohibited Substances or Alcohol at Work, and Positive Test Following Accident/Incident may be returned to work only if following criteria are met:

- The Turner Employee works with an EAP counselor as detailed above and/or successfully completes and provides proof of completing a Turner Certified/Recognized Substance Abuse Rehabilitation Program at their own expense or at the expense of an Alternative Program Administrator if such Alternative program has an accepted program in place;
- The Turner Employee submits a written request to the Business Unit EH&S Director and Loss Control for approval prior to his/her return to work. A copy of the certificate of completion of the program must be attached;
- The Turner Employee submits to a re-employment drug test which has a Negative Test Result; and
- The Turner Employee consents and submits to additional testing without prior notice for a period of eighteen (18) months following re-employment or re-instatement, with all tests having a Negative Test Result.

Rehabilitation of Other Workers

Other Workers who are removed from Turner Project or Turner Facility by the Other Worker's employer and barred from any subsequent work on Turner Projects or at Turner Facilities pursuant to the "Penalties" section of this Policy may work in the future on a Turner Project or Turner Facility only if the following criteria are met (This option for rehabilitation does not apply to an Other Worker with an offense for Possession and/or Distribution of drugs/paraphernalia or Refusal to Consent or Submit to/Report for Test When Directed) :

- The Other Worker successfully completes a Substance Abuse Rehabilitation Program at their own expense or at the expense of their employer if such employer has an accepted program in place and proof of completion of such program is provided to Turner's **Medical Review Officer** and;
- The employer submits a written request to Turner's Director of Safety and Loss Control for approval prior to Other Worker's return to work. A copy of the certificates of completion must be attached and;
- The Other Worker tests negatively for drugs and/or alcohol before returning to the work site.

Appendix A

Environmental Operational Policy

Appendix A: Environmental Operational Policy

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I. Policy Statement

Turner does not want to be in the business of performing contaminated or hazardous remediation work. It is critical that Turner Business Units take all steps possible to insulate Turner from taking the risk of the Owner's contaminated or hazardous materials.

Normally it is the owner's responsibility to arrange for the remediation of any contaminated or hazardous materials, whether found before the project is bid and awarded, or if discovered during construction. Turner requires that the Owner provide assurances via a Clean Letter from a certified/licensed remediation subcontractor that a project site is either free from environmental hazards before work begins or that the environmental hazard identified during an ongoing project has been successfully remediated.

If Turner is contractually obligated to perform contaminated or hazardous remediation, or if the Owner asks Turner to hold the contract, the General Manager agrees to do so and the Owner agrees, or does not agree, to sign an Agreement of Convenience, the procedures described below will be followed.

At no time will Turner self-perform any contaminated or hazardous remediation. Details involving our response to contaminated or hazardous materials under different scenarios are provided below.

Please note that separate Mold Protocol is in place which includes input from our Corporate Counsel, Peckar and Abramson, and the protocol is described on Turner Knowledge Network (TKN). The Mold Protocol must be utilized when mold is identified on Turner projects.

II. Procedures

A. Identifying and responding to an existing environmental risk before Turner proposes on or bids a job:

1. **Identification of the risk on the Turner Proposal "Authorization Form" (PA or CA).** If an environmental risk is identified during the job pursuit process, it must be identified by checking off (X) the category marked "Environmental Risk" and identifying the specifics of the environmental risk under the Risk Management Comments section.
2. **Pre-Proposal Planning:**
The Business Unit Safety Director and the senior safety person for the Region, if one exists, must be contacted regarding all projects where environmental assessments have identified hazardous materials. (*This will include but is not limited to carbon tetrachloride, asbestos, mold, blood borne pathogens, contaminated soils (Mercury, Lead, Arsenic, Radon, etc.), PCB's, underground storage tanks and chemical agents stored in Owner's facilities.*)

During the pre-proposal phase, we should be aware of environmental risks on the following building types. They are possible “Red Flag” projects because existing hazardous materials may be found on these sites. For additional information on existing hazardous conditions that may exist on these building types, please see the [Red Flag](#) link.

- School Buildings
- Government Buildings
- Healthcare Facilities
- Manufacturing and Industrial Facilities
- Airports
- Conversions of Any Building Type to Residential (Rentals or Condos)

a. **When Turner will not be contractually obligated to handle the environmental remediation (i.e. the Owner or others hired by the Owner will handle any environmental remediation):**

Prior to proposing on or bidding work, the Business Unit must still explore the possibility that hazardous material exists within the proposed project site or limits. We must inquire if the Owner has and will provide Turner with an Environmental Assessment (Phase I) Pre-Demolition Survey. Should the Business Unit suspect that an environmental hazard exists on a project site or in areas of the building as a result of the Phase I being performed, or from jobsite visits, etc.; the Business Unit should suggest that the Owner perform a Phase II inspection that is completed by a qualified (certified or licensed according to state and local regulations) environmental consultant. This should include any existing mold discovered during pre-project walks. We must ensure that Turner Operations and Safety walk the job site before we submit a proposal.

The Business Unit must qualify their proposal to clearly state that we have not included any money for remediation and expect that all hazardous materials will be abated under a separate contract held by the Owner and that must occur prior to Turner Construction mobilizing on site or in the areas affected.

Upon completion by the Owner’s consultant(s) and/or subcontractors, Turner will require a [Clean Letter \(Section VII\)](#) documenting and certifying the successful remediation and subsequent clearance to proceed with construction. The Clean Letter **must** be obtained prior to mobilization. Remediation must be done to OSHA standards at a minimum. H.U.D. standards are not acceptable for lead remediation. Remember that Clean Letters are normally given only for “Areas of Concern” (AOC’s) that are mentioned in the Phase I or II Assessments so we must never assume that the entire site or building is covered by a single Clean Letter. Any time we find soil or interior building conditions that may signal a problem area, we must immediately go back to the Owner to have the areas tested and remediated as needed before we disturb or remove any material.

It is a “Best Practice” that the Business Unit hire a 3rd party environmental consultant, to review the results of the Owner’s consultants and remediation firm

reports and the Clean Letter to ensure via a “second set of eyes” that we understand exactly what was done and that the affected areas have been remediated . This ensures that the Business Unit always has a qualified professional to review and give expert advice in protecting Turner’s interest.

b. **When Turner will be contractually obligated to handle the Environmental Remediation, the following steps must be taken:**

The Business Unit must review all information provided by the Owner (Phase I and Phase II reports, surveys, and historical records) to quantify the hazardous material to be included in our proposal and obtain competitive bids for the remediation work **(only)**.

The Business Unit will retain the remediation subcontractor and also must retain a 3rd party environmental consultant to protect Turner’s interest and provide guidance, specifications, monitoring of the work and final clearance.

The costs for Turner’s 3rd party environmental consultant and remediation subcontractor must be included in our price. If possible, the Business Unit should include consulting and remediation funds as an allowance in our proposal.

The Business Unit must obtain approval from Stephen Spaulding II, National EH&S Coordinator, 513-616-2092, sjspaulding@tcco.com and the Risk Management Claim Director on the **Remediation Approval Request Form** (Section XII) and Turner can then subcontract with a qualified (certified or licensed according to state and local regulations) remediation subcontractor for the remediation in accordance with Item **B.6** of this Policy.

Project must fill out the **Pollution Liability Questionnaire** (Section X – Form itself and Section V – Insurance Requirements) and send to Susan Hughes [shughes@tcco.com] in the Risk Management Department.

The remediation subcontractor will provide a written remediation plan to Turner to eliminate the environmental risk and fully satisfy Turner, state, federal, and OSHA requirements for performing the work. This plan will be reviewed by project staff; the Business Unit Safety Director, Turner’s 3rd party environmental consultant and Stephen Spaulding II, 513-616-2092, sjspaulding@tcco.com. The Turner Superintendent must collect and maintain copies of all manifests signed by the remediation subcontractor, the transporter and the disposal site. **Never have Turner’s name on the manifest and never sign the manifest.**

When the remediation subcontractor performs the remediation, the Project Superintendent is responsible for ensuring that Turner’s 3rd party environmental consultant reviews the Work and confirms that the remediation is complete and that Turner has received a Clean Letter for the affected area **prior** to any workers entering the affected space. At no time shall Turner personnel or subcontractors enter an affected space that has not been formally approved as safe to enter. The Clean Letter must be communicated to every subcontractor and worker and then

documented. Each worker is required to sign the minutes of the tool box meetings held to announce the Clean Letter and the Clean Letter must be posted.

c. **If the Owner asks Turner to hold the remediation subcontract, and the General Manager agrees, and Owner signs an Agreement of Convenience:**

The Owner signs the Turner [Agreement of Convenience](#) (Section VIII) indemnifying Turner for any liability. **NOTE:** With this agreement Turner is not agreeing to perform the remediation work, merely entering into a subcontract for the performance of the remediation work to be performed under the direction and control of the Owner and their environmental consultant.

Owner hires their environmental consultant to provide a Phase I and Phase II Pre-demolition Survey and determine the precise means, methods, techniques, sequences, safety precautions, etc., prior to commencement of the remediation work. Their environmental consultant will also monitor the remediation work and provide signoff and final clearance.

The Business Unit must obtain approval from Stephen Spaulding II, 513-616-2092, sjspaulding@tcco.com and the Risk Management Claim Director on the [Remediation Approval Request Form](#) (Section XII). Turner can then subcontract with a qualified (certified or licensed according to state and local regulations) remediation subcontractor for the remediation in accordance with Item **B.6** of this Policy.

It is a best practice that the Business Unit hire a 3rd party environmental consultant, to review the results of the Owner's consultants and remediation firm and reports and the Clean Letter to ensure via a "second set of eyes" that we understand exactly what was done and that the affected areas have been remediated. This ensures that the Business Unit always has a qualified professional to review and give expert advice in protecting Turner's interest.

The costs for Turner's remediation subcontractor and 3rd party environmental consultant, if used, must be included in our price.

Project must fill out the [Pollution Liability Questionnaire](#) (Section X – Form itself and Section V – Insurance Requirements) and send to Susan Hughes [shughes@tcco.com] in the Risk Management Department.

The remediation subcontractor will provide a written remediation plan to Turner to eliminate the environmental risk and fully satisfy Turner, state, federal, and OSHA requirements for performing the work. This plan will be reviewed by project staff; the Business Unit Safety Director, Turner's **3rd party environmental consultant**, if used, and Stephen Spaulding II, cell-513-616-2092, sjspaulding@tcco.com. Turner Superintendent must collect and maintain copies of all manifests signed by the remediation subcontractor, the transporter and the disposal site. **Never have Turner's name on the manifest and never sign the manifest.**

When the remediation subcontractor performs the remediation, the Project Superintendent is responsible for ensuring that **Turner's 3rd party environmental consultant reviews the Work and confirms that the** all remediation is complete and Turner has received a Clean Letter prior to any workers entering the space. At no time shall Turner personnel or subcontractors enter a space that has not been formally approved as safe to enter. The Clean Letter must be communicated to every subcontractor and worker and then documented. Each worker is required to sign the minutes of the tool box meetings held to announce the Clean Letter and the Clean Letter must be posted.

d. If the Owner asks Turner to hold the remediation subcontract, the General Manager agrees, but the Owner will not sign an Agreement of Convenience:

Owner, along with their environmental consultant, retains control and liability of the remediation protocols/specifications, precise means and methods, sequences and safety precautions. Turner is ONLY holding the actual abatement work contract. The Owner's consultant will monitor the abatement work and provide signoff and final clearance.

It is a best practice that the Business Unit hire a 3rd party environmental consultant, to review the results of the Owner's consultants and Turner's remediation firm reports and the Clean Letter to ensure via a "second set of eyes" that we understand exactly what was done and that the affected areas have been remediated. This ensures that the Business Unit always has a qualified professional to review and give expert advice in protecting Turner's interest.

If Turner is to accept the contractual obligation for both the remediation protocols/specifications, sequence, safety, etc., and the remediation work itself, then the Business Unit **must** retain a 3rd party environmental consultant to protect Turner's interest and provide guidance, specifications, monitoring of the work and final clearance. The 3rd party environmental consultant is to be hired in accordance with Item B.6 of this Policy. Costs for Turners' 3rd party environmental consultant must be part of the pricing for the work.

The Business Unit must obtain approval from Stephen Spaulding II, cell-513-616-2092, sjspaulding@tcco.com and the Risk Management Claim Director on the **Remediation Approval Request Form** (Section XII) and Turner can then subcontract with a qualified (certified or licensed according to state and local regulations) environmental subcontractor for the remediation in accordance with Item **B.6** of this Policy.

Project must fill out the **Pollution Liability Questionnaire** (Section X – Form itself and Section V – Insurance Requirements) and send to Susan Hughes [shughes@tcco.com] in the Risk Management Department.

The remediation subcontractor will provide a written remediation plan to Turner to eliminate the environmental risk and fully satisfy Turner, state, federal, and OSHA requirements for performing the work. This plan will be reviewed by project staff,

the Business Unit Safety Director, Turner's 3rd party environmental consultant, if used, and **Stephen Spaulding II, 513-616-2092, sjspaulding@tcco.com**. Turner Superintendent must collect and maintain copies of all manifests signed by the remediation subcontractor, the transporter and the disposal site. **Never have Turner's name on the manifest and never sign the manifest.**

When the remediation subcontractor performs the remediation, the Project Superintendent is responsible for ensuring that Turner's 3rd party environmental consultant reviews the Work and confirms that all remediation is complete and Turner has received a Clean Letter prior to any workers entering the affected area. At no time shall Turner personnel or subcontractors enter an affected area that has not been formally approved as safe to enter. The Clean Letter must be communicated to every subcontractor and worker and then documented. Each worker is required to sign the minutes of the tool box meetings held to announce the Clean Letter and the Clean Letter must be posted.

The costs for Turner's 3rd party environmental consultant and remediation subcontractor must be included in our price.

B. Identifying and responding to existing environmental exposures after Turner begins work:

If an environmental risk is identified on the project site after Turner begins work, the project must make sure that the following happens to fully protect Turner's interests and all workers and staff.

1. **Immediately Stop Work in Area / Control the Situation:** The Project Superintendent is responsible to stop all work directly associated with the area in question. The area should be controlled in such a manner to eliminate the potential for both worker and public exposure.
2. **Post Warnings:** The Project Superintendent shall post signage, barricades, and other protective measures to ensure the area remains undisturbed. Work with the Business Unit Safety Director to assure all signage meets OSHA regulations.
3. **Notify Safety and Claims:** The Project Superintendent shall immediately notify the Business Unit Safety Director and the Business Unit Claim Coordinator. They will in turn notify **Stephen Spaulding II, 513-616-2092, sjspaulding@tcco.com** and the Risk Management Department Claim Director. The Business Unit Safety Director completes the **Turner Environmental Risk Investigation Report (Section VI)** and submits it to the Business Unit Operations Manager, Regional Operations Manager, Stephen Spaulding II, 513-616-2092, sjspaulding@tcco.com and the Risk Management Department Claim Director. The team will hold a conference call if necessary to ensure that the appropriate protocols are in place and the action plan as outlined in the report is being followed.
4. **Inform Staff:** Turner shall inform everyone working on the project, both verbally and **in writing**, of the situation.

5. **Review Owner Contract and Inform Owner of Conditions:** Turner shall first review the applicable terms and conditions of our contract with the Owner and then promptly inform the Owner verbally and in writing of conditions identified, and any impact to schedule and/or costs. If Turner incurs additional costs and/or is delayed due the presence or remediation of hazardous material etc, Turner should be entitled to an equitable adjustment in the contract price and/or the contract time.

- a. If Turner is not contractually obligated to handle the environmental remediation the Business Unit will follow IIA2a above.
- b. If Turner is contractually obligated to handle the environmental remediation the Business Unit will follow IIA2b above
- c. If the Owner asks Turner to handle the environmental remediation, the General Manager agrees and Owner signs an Agreement of Convenience the Business Unit will follow IIA2c above.
- d. If the Owner asks Turner to handle the environmental remediation, the General Manager agrees, and the Owner will not sign an Agreement of Convenience the Business Unit will follow IIA2d above.

6. **Purchasing Policy – Hiring of Environmental Consultants and Remediation**

Subcontractors Remediation subcontractors must be certified and/or licensed through their respective state for the work to be performed. Special attention should be placed on any transportation issues and Department of Transportation regulations to assure hazardous material is disposed of properly.

- a. Develop within each Business Unit a list of prequalified environmental consultants (to be used for Phase I and Phase II Assessments, environmental engineering work, testing and monitoring) and remediation subcontractors (to be used to remove, transport and dispose of mold, contaminated or hazardous materials).
- b. Each potential company will complete the standard Turner Prequalification Form with the following additional requirements:
 - Average volume for the past three (3) years must equal at least five (5) times the estimated value of the work.
 - Company must have completed or be actively involved in a minimum of five (5) projects of comparable size and complexity in the past three (3) years.
 - As part of the prequalification process, Turner's Environmental, Health and Safety Policy (or comparable company policy) must be reviewed by Business Unit Safety Director.
 - Company must show that they have the people to perform the work being contracted. (engineers, technicians, hygienists, supervisors, equipment)
- c. Environmental consultants must have "Professional Environmental Consultants Liability" insurance with a minimum of \$5M Professional Liability Insurance (will be "Claims Made" coverage; Turner, Owner, et al not to be Additional Insured).

- d. Remediation subcontractors must have Contractor's Pollution Liability Insurance (must be "Occurrence Based" coverage; Turner, Owner, and others required by contract to be Additional Insured) with a minimum of \$5M per Occurrence and \$10M Aggregate and endorsements for Contingent Transportation and Contingent Non-Owned Disposal Site. Purchasing Manager, Financial Manager and Business Unit Safety Director must review policies and endorsements. Any deductibles or self-insured retentions over \$50,000 must be disclosed and approved by Turner.

Remediation subcontractors will be contracted with using Form 36 with the special pollution insurance requirements added in the Additional Provisions (Attachment C found in the Purchasing Manual). Remediation subcontractors are treated as any other subcontractor in terms of Subguard and Turner bonding policy. Remediation subcontractors are to be excluded from CCIP's. Turner Construction will never subcontract separately with a "transporter" or the "disposal facility"; this must be part of the scope of the remediation subcontractor.

- e. Business Unit Safety Director will monitor that OSHA safety requirements are followed for by the remediation subcontractor for their employees.

III. Roles and Responsibilities:

GM and Manager of Business Development:

- Negotiate the General Contract to specifically exclude Turner from any obligation to perform remediation of any existing contaminated or hazardous materials.
- Require that the owner sign the Agreement of Convenience if owner insists that Turner remediate existing contaminated or hazardous materials.

Operations Manager:

- Ensures adherence to all corporate policies.
- Does not allow Turner to contract remediation work without securing the proper approvals and with adherence to this Environmental Operational Policy.

Project Executive/Manager:

- Assist in developing job hazard analysis and pre-task plans to ensure hazardous materials are abated properly.
- Obtain Phase I inspection and report findings to OM. This is accomplished before contract is executed or GMP established. (*Information on the Phase I & II inspection process can be found in Section X and in Turner Construction Safety, Health and Environmental Policy located on **Turner Knowledge Network**.*)
- Obtain Phase II report if Phase I identifies any hazardous materials.
- **If** it is contractually possible, get the Owner will accept responsibility for existing conditions and to carry remediation as a separate contract. Obtain the Clean Letter from the Owner or his environmental consultant and review for completeness.
- **If** we are contractually obligated or if Owner signs Agreement of Convenience

- Ensure that Project Staff understand and comply with all corporate policies relating to hazardous and contaminated material remediation.

Business Unit Safety Director:

- Provide technical expertise to the project team regarding all aspects of hazardous materials.
- Act as a liaison between project team and Risk Management Department.
- Assist in the review of any subcontractor (Turner executed contract) remediation plan.
- Review Clean Letter for completeness and advise project staff on how to proceed.

Business Unit Purchasing Manager:

- Provide technical expertise to the project team regarding the contractual obligations associated with hazardous material remediation.
- Ensure all consultants and subcontractors hired by Turner to engage in this work are qualified and able to perform this type of work.
- Act as a liaison between the Business Unit and Corporate Purchasing.
- Responsible for compiling any remediation subcontract and consulting agreements on projects where Turner hires these consultants and subcontractors.
- Purchase & enforce environmental insurance requirements from all subcontractors.

Stephen Spaulding II, Environmental Health and Safety:

- Will provide expertise and ensure proper coordination between Business Unit and Turner Risk Management Department.
- Assist in the review of any subcontractor (Turner executed contract) remediation plan.

Risk Management Claim Director:

- Will provide expertise and assistance as needed and will obtain technical expertise when warranted.
- Will coordinate among Business Unit, Safety & Corporate Counsel as necessary.

IV. Additional Resources

Turner Training:

- Mold and Moisture Awareness (TKN)
- Environmental Awareness (TKN)
- Industrial Hygiene (TKN)

Other Guideline/Policies:

- Turner Corporation Safety, Health and Environmental Policy (TKN)
- Operations Manual (TKN)

V. Insurance Requirements

Any project where the abatement or remediation portion of the work exceeds 25% of the overall construction volume or the abatement/remediation contract exceeds \$500,000 may require project specific pollution coverage. If any of these conditions

exist, consult with the Risk Management Department to determine if a project specific placement of insurance will be necessary. Please see the [Pollution Liability Questionnaire \(Section X\)](#) and list of information required to aid in making this determination. This questionnaire should be completed and emailed to the attention of Susan Hughes [shughes@tcco.com] in the Risk Management Department.

These conditions apply to any project where Turner, through its subcontractors, is responsible to handle, store, remediate or abate any contaminated or hazardous material including but not limited to asbestos, lead, mold, PCB's, underground storage tanks and/or contaminated soils.



VI. ENVIRONMENTAL RISK INVESTIGATION REPORT

Date of Discovery:

Investigation Date:

Date Turner Notified

By Whom:

Project / Building Type:

Location:

Project Name / Number:

BU Contact Name:

Contract Type (Pure CM, CM at Risk, GC, Other)

BU Contact Number:

Subcontractor Entities Involved

Environmental Risk Identified:

Extent of Contamination:

Project / Building Type:

☐ 1 - 10ft²

☐ New Structure

☐ 10 - 30ft²

☐ Renovation

☐ 30 - 100ft²

☐ Demolition

☐ > 100ft²

Description of the Occurrence & Action Plan to Resolve:

Location in the Project:

Building History Evaluation:

Investigated By:

Print Name

Signature

Date

Note: In addition to completing this form, the completer must follow the designated guidelines specified in "Section II - Identifying and Responding to Existing Environmental Exposure after Turner begins work" in the Environmental Operational Policy located on TKN.

This form is to be submitted to the Business Unit Operations Manager, Stephen Spaulding II, 513-616-2092, sjspaulding@tcco.com and the Risk Management Department Claims Director.

VII. Sample Clean Letter

This clearance approval pertains to the following Address and specifically the containment area defined below:

Description of Environmental Concern: (Type, nature of problem, location):

Project Name/Number: _____

Address: _____

Claim #: _____ Testing Company Name: _____

Turner Project Representative: _____

Containment Area: _____

Based on the sampling results and observations made by Testing Company personnel while on-site on _____, the above-listed containment area is cleared for reconstruction.

Prepared
by: _____

Name of Investigator

Reviewed
by: _____

Name of Testing CO Principle

Date: _____

VIII. Agreement of Convenience

AGREEMENT

This Agreement made as of the ____ day of Month, Year by and between _____, Owner
and Turner Construction Company, Contractor.

WITNESSETH

WHEREAS, the Owner desires that a contractor abate Environmental Risk ("Work") from its facility located at
____ ("Facility"); and

WHEREAS, the Contractor does not desire to and does not normally perform this type of Work, but at the
Owner's request and merely as a courtesy and for the convenience of the Owner, will enter into a
Subcontract with an remediation Subcontractor provided that the Contractor is not in any way
responsible for the remediation Work and provided that the Owner agrees to the terms set forth in this
Agreement.

NOW, THEREFORE, in consideration of the agreements and undertakings hereinafter set forth, and for the
other good and valuable consideration, the receipt and adequacy therefore being hereby acknowledged,
the Owner and the Contractor agree as follows:

1. It is understood and agreed by the Owner that the Contractor is not agreeing to perform the remediation
Work and that the Contractor is merely entering into a Subcontract for the performance of the
remediation Work to be performed under the direction and control of the Owner or its Consultant.
2. The Owner will hire a Consultant who will determine precisely the means, methods, techniques,
sequences, safety precautions and safety programs, including the interrelationship or effect on other
work in connection with the project. Such methods, techniques, safety precautions and safety programs
shall be specified in writing by the Consultant prior to commencement of the Work.
3. It is understood and agreed that the Contractor is not and that the Consultant is responsible for
supervising, managing and overseeing the Subcontractor's Work.
4. The Owner acknowledges and agrees that the Contractor has absolutely no responsibility or liability in
connection with the Work, either direct or indirect, since the Contractor is having this Work performed for
the convenience of the Owner. The Owner shall approve the form of agreement between Contractor and
remediation Subcontractor prior to the commencement of the Work.

5. The Owner shall reimburse the Contractor for any and all costs incurred within thirty (30) days of the date of invoices submitted by the Contractor to the Owner therefore.
6. The Owner shall defend, indemnify and hold harmless the Contractor and its agents and employees against any and all claims, damages, losses and expenses, including, but not limited to attorneys' fees, arising out of or resulting from performance of the Work.
7. In no event will the Contractor be liable for any special, indirect, incidental or consequential damages.
8. The Contractor will be permitted at the Contractor's sole discretion, to purchase and maintain Pollution Legal Liability Insurance and for other insurance applicable to the Work in an amount to be determined by the Contractor. The Owner will reimburse the Contractor for the cost of the premiums should the Contractor elect to purchase such insurance.
9. Any recovery of losses and damages by the Owner is limited to that actually recovered from the remediation Subcontractor, and Owner hereby expressly waives and releases Contractor from any and all liability, losses, costs, expenses and damages with the limited exception of that actually recovered from the remediation Subcontractor. The Contractor has no responsibility or obligation to assert a claim against the remediation Subcontractor. The Contractor hereby assigns whatever rights Contractor may have to assert against the remediation Subcontractor for damages suffered by Owner. The Owner hereby accepts the aforesaid assignment.
10. Upon completion of the Work, the Consultant shall provide a Certificate to both the Owner and the Contractor stating that the Work was performed properly.

OWNER:	CONTRACTOR:
By:	BY:
Title:	Title:
Date:	Date:

IX. Red Flag Projects: Project Types with Potential Existing Environmental Hazards

Below are materials and conditions to be aware of when dealing with the project types listed below as they tend to have pre-existing environmental hazards. Note: This is not all inclusive. Please check with your Environmental Consultant for a complete list of possible contamination areas.

School Buildings

- Asbestos Containing Materials
 - Pipe Insulation (corrugated air-cell, block, etc.)
 - Boiler Insulation
 - Fireproofing Materials
 - Ceiling Tiles and Lay-in Panels
 - Vinyl Floor Tile
 - Flooring Backing
 - Construction Mastics (floor tile, carpet, ceiling tile, etc.)
 - Roofing Materials
- Lead Products Based Paint (Construction prior to 1978)
- Polychlorinated Biphenyls (PCBs)
 - Transformers (prior to 1977)
 - Light Ballasts (prior to 1977)
 - Caulking in and around windows, sidewalks, masonry, etc.
- Chemistries (older chemistry labs that could contain volatile and incompatible chemistries)
- Mold
 - Carpeting
 - Sheetrock
- Bird, bat, rodent & animal feces (histoplasmosis)
- Underground storage tanks (USTs)
- Antifreeze and hydraulic fluid
- Mercury in boilers

Government Buildings

- Asbestos Containing Materials
 - Pipe Insulation (corrugated air-cell, block, etc.)
 - Boiler Insulation
 - Fireproofing Materials
 - Ceiling Tiles and Lay-in Panels
 - Vinyl Floor Tile
 - Flooring Backing
 - Construction Mastics (floor tile, carpet, ceiling tile, etc.)
 - Roofing Materials
- Lead based paint (Construction prior to 1978)

- Polychlorinated biphenyls (PCBs) ○ Transformers (prior to 1977) ○ Light ballasts (prior to 1977) ○ Caulking
- Mold
 - Carpeting
 - Sheetrock
- Bird, bat, rodent & animal feces (histoplasmosis)
- Underground storage tanks (USTs)
- Mercury in boilers

Healthcare Facilities

- Asbestos Containing Materials
 - Pipe Insulation (corrugated air-cell, block, etc.)
 - Boiler Insulation
 - Fireproofing Materials
 - Ceiling Tiles and Lay-in Panels
 - Vinyl Floor Tile
 - Flooring Backing
 - Construction Mastics (floor tile, carpet, ceiling tile, etc.)
 - Roofing Materials
- Lead based paint (Construction prior to 1978)
- Polychlorinated biphenyls (PCBs) ○ Transformers (prior to 1977) ○ Light ballasts (prior to 1977) ○ Caulking
- Mold
 - Carpeting
 - Sheetrock
- Underground storage tanks (USTs)
- Blood borne pathogens (HIV, Hepatitis)
- Medical gases (O₂, LN₂, NO_x, etc)
- Waste anesthetic gases
- Mercury in boilers

Manufacturing and Industrial Facilities

- Asbestos Containing Materials
 - Pipe Insulation (corrugated air-cell, block, etc.)
 - Boiler Insulation
 - Fireproofing Materials
 - Ceiling Tiles and Lay-in Panels
 - Vinyl Floor Tile
 - Flooring Backing
 - Construction Mastics (floor tile, carpet, ceiling tile, etc.)
- Roofing Materials

- Lead based paint (Construction prior to 1978)
- Polychlorinated biphenyls (PCBs) ○ Transformers (prior to 1977) ○ Light ballasts (prior to 1977) ○ Caulking
- Mold
 - Carpeting
 - Sheetrock
- Underground storage tanks (USTs)
- Bird, bat, rodent & animal feces (histoplasmosis)
- Antifreeze or hydraulic fluid
- Residual process chemistries
 - Nickel plating
 - Chromium plating
 - Acid baths, etc

Airports

- Asbestos Containing Materials
 - Pipe Insulation (corrugated air-cell, block, etc.)
 - Boiler Insulation
 - Fireproofing Materials
 - Ceiling Tiles and Lay-in Panels
 - Vinyl Floor Tile
 - Flooring Backing
 - Construction Mastics (floor tile, carpet, ceiling tile, etc.)
 - Roofing Materials
- Lead based paint (Construction prior to 1978)
- Polychlorinated biphenyls (PCBs) ○ Transformers (prior to 1977) ○ Light ballasts (prior to 1977) ○ Caulking
- Mold
 - Carpeting
 - Sheetrock
- Underground storage tanks (USTs)
- Contaminated soils (glycol, petroleum hydrocarbons {JP4/8 jet fuel}, antifreeze, hydraulic fluids)
- Bird, bat, rodent & animal feces (histoplasmosis)

X. Pollution Liability - Questionnaire

Email: Susan Hughes [shughes@tcco.com] in the Risk Management Department

From: _____

Business Unit: _____

Telephone #: _____

Date: _____

PROJECT INFORMATION

1. Project Name/Address and Contract Number:

2. Total Contract Volume:

3. Description of remediation/remediation Work to be performed including description of the contaminants:

4. Description Of Project to be constructed after the remediation/remediation is completed:

5. Remediation/remediation contract volume :

6. Attach a copy of the Phase 2 Environmental report (if available):

SUBCONTRACTOR INFORMATION

1. Name of contractor performing remediation/remediation work:
2. Has Turner worked with this contractor on previous projects? If not, have references been checked and verified?
3. How many years experience does the contractor have for this type of remediation work? Is the contractor licensed and/or certified with appropriate state agencies?
4. How much in Pollution Liability limits is the remediation subcontractor is providing? Is the contractor's pollution policy an occurrence based or claims-made policy? Attach copy of contractor's certificate.
5. Has the contractor had any pollution claims made against their pollution policy? If so, please provide explanation and amount of claim(s) paid:
6. Has the contractor ever received any citations, fines, etc from the EPA or OSHA? If so, please provide specifics:
7. Will Turner be an additional insured under the subcontractor's pollution policy?
8. What certifications and/or licenses does contractor have to perform this type of work? Please provide copies of each one (usually issued by various state or local municipality agencies who govern the specific type of work). Note: there are typically several agencies involved.

XI. Definitions Phase I and Phase II:

Phase I: A Phase I Environmental Assessment is a research of historical uses and activities of the site. A Phase I is usually performed by an Environmental Consultant. The historical research usually includes the following:

- Inspecting the property.
- Identifying past owners and the property use during time of ownership.
- Reviewing governmental records to determine past use and use or disposal of hazardous substances.
- Interviewing past property owners and or employees.
- Reviewing aerial photographs of the site.
- Reviewing state and federal databases that list contaminated sites.
- Reviewing adjacent properties to evaluate potential sources of off-site contamination.

After the completion of a Phase I site assessment there is either an indication that hazardous substances exist on the property and a Phase II assessment should be completed or a No Further Action (NFA) document is obtained.

Phase II: If after the completion of a Phase I there is an indication of hazardous substances existing on the site, a Phase II environmental assessment should be completed. The purpose of a Phase II is to develop and understand what contaminants are on the site, where they are located, and what levels the contaminants are at. This is accomplished using field analytical technologies, which test for chemicals on site and sampling which consists of taking the sample back to an environmental laboratory and analyzing the sample there

The type of testing in the laboratory is also dependent or geared towards the information obtained in the Phase I environmental assessment.

NFA Letter: A NFA is a letter from the Environmental Consultant giving affirmation that the site protects human health and the environment for the intended use of the site.

Clean Letter: A Clean Letter is a letter issued by the Environmental Consultant giving affirmation that the site hazardous substances identified in the Phase II report have been abated to acceptable OSHA standards. Note: HUD levels are not acceptable levels for worker safety as defined by the CFR (Code of Federal Regulations) 1926 standards for Construction.

Qualified: Means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

XII. Remediation Approval Request Form

Business Unit: _____

Project name: _____

Date: _____

Requested by: _____

We request approval to hire _____ to perform _____

on the above mentioned Project based on the following conditions:

Turner's General Contract obligations-

Subcontractor qualification per attached Pollution Liability Questionnaire:

Consultant scope of Work:

GM/OM Approval
Date:

Approved to Hire Remediation Consultant and/ or Subcontractor

Stephen Spaulding II, Environmental, Health & Safety Director
Date:

Risk Management Department Claim Director
Date:

Appendix B: Moisture Control Plan

Introduction

- The following information includes suggested ideas for establishing a Moisture Control Plan for your project. This is a reference document only and a basic guide and checklist to plan and prepare for weather and moisture.
- You are strongly encouraged to complete a **project specific** Moisture Control Plan (as early as possible). It should be a document completed in coordination with other procedures manuals, logistics plans, and Constructability reviews

Key Factors for Developing a Moisture Control Plan

- ✓ *Factor in your exposures into the construction schedule or phasing*
- ✓ *Complete in conjunction with Site Logistics and Storm Water control*
- ✓ *Closely Review exterior envelop details in Constructability*
- ✓ *Develop contract language and procedures in your AP's.*
- ✓ *Incorporate temporary protection into scopes and estimate*
- ✓ *Select superior building products and materials (revise if needed)*
- ✓ *Close-in building prior to starting drywall*
- ✓ *Prepare HVAC Commissioning, start-up and climate control (early)*
- ✓ *Rapid response to water incursions (should they occur)*

The Plan is Developed in the following 3 Areas

1. Preconstruction and Constructability

- ✓ Contracts, scopes of work, estimating added cost impacts, preparing site logistics, and Constructability reviews

2. Moisture Control Plan Details

- ✓ Preparing the plan specific to your project that incorporates issues from Preconstruction, and the process to implement during Construction including weather protection measures.

3. Construction and Closeout Procedures

- ✓ Construction Process and Inspections, Water Damage Protocol, Mold Remediation Guidelines, and Closeout and Turnover

Moisture Control Plan

Date Created:

Turner's 3-Point Program is as follows

- i. **When in Doubt... Cut it Out!** – This refers to wet materials (not mold).
Do not self-remediate mold with Turner or subcontractor forces without consultation and approval by P&A/The Risk Management Department
- ii. **I – Investigate** the problem. Call The Risk Management Department

C – Cleanup the water damage; not mold

R – Remediate, if mold is present, request direction from The Risk Management Department

E – Eliminate the source of water infiltration; Make Sure

D – Document, document, document the facts, cleanup, results, acceptance, and **closure** of the issue
- iii. **Buildings should Blow... Not Suck!** – This refers to the air balance and proper operation of HVAC to avoid introduction of moist, humid outdoor air inside buildings.

Changes to Turner Systems

- ✓ Risk Management – Weather planning and dealing with moisture should be an item of discussion in preparing your risk management plan.
- ✓ ORM Meetings – Reviewed for compliance by the Operations Manager at ORM's, and verified that we are implementing during site inspections.
- ✓ Construction Defects Task Force – this committee will also be reviewing moisture control plans and exterior envelope potential defect issues.
- ✓ Meetings – Discuss Moisture Control Plan issues and status at each Turner project meeting to address action items.
- ✓ Exterior Envelop – Focus on the entire exterior envelope including roofs, and also review HVAC systems. All building systems that can impact the presence of moisture in the completed facility should be reviewed in detail.
- ✓ Filing System – Use the following Turner file numbers in Uniform Filing Code to document all related issues involving Moisture Control:

00820 Moisture Control Plans
00825 Water Damage Incident Reports

1. Preconstruction and Constructability

Procurement & Scopes

When beginning to prepare scopes of work, bidding, and buy out the subcontractors, consider these basic items:

- ✓ Type of materials specified and locations (susceptible to moisture)
- ✓ Specifications include mock-ups, inspections, and temporary protection
- ✓ Budget and any value engineering (holds and no VE of exterior envelop)
- ✓ Schedule demands and critical close-in milestones
- ✓ Quality of design details and completeness of documents
- ✓ Buyout temporary protection (during bid and award process)

General Provisions

- ✓ Buyout the Moisture Control Plan from the subcontractors. Make this an attachment to the subcontracts.
- ✓ Consider adding language in Exhibit B to address moisture concerns. This can include material handling, protection measures, cleanup and dry out from water, and preventative maintenance during construction.
- ✓ Consider purchasing added testing and mock-ups above the specifications from selected trades that could involve potential leaks or exposures.
- ✓ Develop Allowances in the GMP to deal with various moisture mitigation measures (temporary protection, moisture resistant materials, curbs, etc.).
- ✓ Clarify the HVAC commissioning program and timing of the start-up of equipment for interior humidity and environmental control.

Scope of Work Ideas

The following are examples of items to include in the subcontractor detailed scopes of work related to moisture control.

Foundation and Storm Drain

- ✓ Slab on grade specification issues: water/cement ratio of 0.45 or less, add plasticizer to improve workability, delete sand layer above vapor barrier.
- ✓ Purchase vapor barrier below slab on grade.
- ✓ Consider a sub drainage system below SOG to collect and drain water and not allow water to accumulate below the slab.

Moisture Control Plan

Date Created:

Roofing and Waterproofing

- ✓ Make temporary roofs part of and scope of work. Make this a substrate to the permanent roofing system (if possible). Locate selected roofs on plan.
- ✓ Purchase roofing trades earlier to allow time to plan temporary roofing and work out details. Buy sheet metal covers with this trade.
- ✓ Close off all roof/slab openings with sheet metal, temporary covers, or "Hip Rap" containment shrink-wrap (carry as an allowance if needed).
- ✓ Purchase added mock-ups and test key details focused on water infiltration.
- ✓ Make sure there is a complete system of waterproofing below stone or tile and that it is turned up the walls at least 12".

Exterior Wall

- ✓ Purchase a composite mock-up of the exterior wall to include various integrated details (into one mock-up). Resolve coordination details.
- ✓ Consider utilizing an exterior shrink-rap system combined with scaffolding to enclose the building and protect from weather (cost of \$0.40/SF elevation).
- ✓ Consider purchasing Constructability review from the subcontractor with a review of the details and make this part of the scope.
- ✓ Conduct a Vapor Analysis of the Exterior wall system.

Interior Finishes

- ✓ Revise drywall at shaft walls to a mold or mildew resistant product (locate at elevator, air, and wet chases or shafts (meet ASTM 3273)).
- ✓ Consider using cement board or mold resistant material behind tile. Do not use moisture resistant or "green board" in wet areas such as toilet rooms.
- ✓ Consider installing drywall down to a certain height above the floor (or hold above floor in certain areas).
- ✓ Revise drywall installed down to ceiling line (to facilitate MEP rough in) to a mildew resistant material since it is likely the exterior wall is not complete.
- ✓ Use concrete unit masonry in lieu of drywall in basement areas, equipment areas, and the like that could be exposed to flooding or excessive moisture.
- ✓ Consider purchasing a moisture barrier on slab on grade in areas where there are resilient flooring type products. Test concrete floors for moisture content prior to installing flooring finishes
- ✓ Consider installing a 6" concrete curbs below walls in these conditions:
 - a. Wet areas such as kitchens, showers, toilet rooms, laundry rooms, mechanical rooms, locker rooms, etc.

Moisture Control Plan

Date Created:

- b. Vertical shafts walls on specific floors to protect bottom of drywall and/or isolate floors to prevent "floor-to-floor" leak damage from above.
- c. Roof openings and parapet conditions (provide termination for roofing).
- ✓ **Do not install vinyl wall covering on exterior walls.** This traps moisture in the wall cavity and may cause mold in these walls.

Mechanical

- ✓ Connect all roof drains on a temporary basis until permanent is connected and tied into storm system.
- ✓ Provide secondary condensate drain piping from all FCU and AHU equipment including piping to nearest drain location.
- ✓ Purchase early test and balance and request subcontractor give this scope to independent company.
- ✓ Purchase added filter replacement at AHU and FCU units during construction minimum of 3 changes (including at test/balance and after acceptance).
- ✓ Buy early start-up of HVAC equipment to allow air movement in the building. Purchase extended warranty for the additional use if needed.
- ✓ Buy CHW piping with valve extenders installed with pre-fitted insulation covers and jackets to avoid damage to insulation for maintenance on valves.
- ✓ Require condensate drain pans at all AHU and FCU units regardless of what is shown on the drawings. Provide secondary drain pans at all units.
- ✓ Seal ends of all lined duct. Any ductwork with damaged or wet duct lining or insulation shall be removed from the project.
- ✓ Cover ends of open ductwork while stored and cover after initial installation until connected to equipment.

Estimating

- ✓ Review products specified. Provide Alternate prices in the estimate for mildew resistant materials. Request these Alternate prices from subcontractors.
- ✓ Identify risks and add specific Exposure Holds to the Direct Costs including:
 1. Temporary weather protection measures
 2. Schedule acceleration (due to work around weather seasons)
 3. Contingency for moisture control issues
 4. Exterior wall coordination, product changes, and added flashing
 5. Drywall materials revised to mildew resistant products
 6. Design consultants and peer reviews.

Moisture Control Plan

Date Created:

- ✓ As a rule of thumb consider setting aside 0.5% of the direct construction cost for these types of exposures (vary from job to job).
- ✓ If exposure holds are not added, request to the Owner that we add an Allowance for potential costs for this added protection.
- ✓ Create a line item cost carried in some trades (roofing, sheet metal, exterior wall, HVAC, drywall) for temporary weather protection based on instructions that we provide in the bid documents (include on scope sheet).

2. Moisture Control Plan

The Basic Rules

Create project-specific Moisture Control plans that follow these basic rules:

- ✓ Created by staff so there is “buy-in” and agreement to execute and enforce.
- ✓ Supplemented with site logistics plan addressing common issues
- ✓ Constructability comments focused on moisture control are included.
- ✓ Items included in plan can realistically be delivered. Do not put anything in the plan that you do not follow-up and implement.
- ✓ Do not create generic checklists that become a project record document.
- ✓ Start each project “fresh” and develop the plan based on your Owner, building type, location, and schedule. Do not “edit” someone else’s plan!
- ✓ Revisit the plan as often as required to ensure conformance (quarterly).

Temporary Protection

- ✓ Consider using exterior “Hipp-Rap” or shrink rap containment at exterior wall, roof, parapet or roof opening conditions to provide protection from rain.
- ✓ Identify exposure areas that may require protection from weather during construction; including expansion joints, roof openings, balconies, low roofs, incomplete windows or elevations, leave out areas, hoist bays, etc.
- ✓ Consider using temporary fans at specific locations for circulation.
- ✓ Consider installing temporary seals at plumbing pipes and riser shafts at the floor to keep water (from pipe leaks) from going down to lower floors. This can “isolate floors or groups of floors to minimize damage should it occur.
- ✓ Consider placing watertight covers and/or sand bag/visqueen curbs at shaft openings at specific locations.
- ✓ Consider temporary visqueen protection at window openings at specific locations and/or elevations (coordinate removal with window sub).

Moisture Control Plan

Date Created:

- ✓ Prepare a temporary grading plan to deal with sheet flow and collection of water during construction. Slope grade away from building.
- ✓ Temporary hoist bay can be sealed with a plywood panel partition to be left in place until hoist bay is filled in with exterior wall.
- ✓ Consider installing temporary roof drains and leaders to direct water away from the building prior to permanent roof drainage system.
- ✓ Consider using desiccant air dehumidifiers or similar air drying equipment after building is enclosed to control the moisture during drywall and finishes (also called Munters Units).

Schedule and Sequence

- ✓ Review and understand the Owner's original schedule and time of year. Educate Owner on possible weather risks. Issue information to Operations for an analysis of construction schedule risks.
- ✓ Identify key milestones in schedule for enclosure of building and completion of temporary and permanent roofs.
- ✓ Enclosing the building before starting drywall should be the goal. This may require a discussion with the Owner initially to properly plan for risks related to temporary protection issues.
- ✓ Consider offering schedule alternates focused on minimizing exposures to weather (be proactive on this issue).
- ✓ Try to develop the project schedule making attempts to work certain activities around rainy seasons or possible wet conditions.
- ✓ Allow for a dry-in period prior to start of finishes to pull out the moisture from the space, take moisture readings and document.

Constructability Review

- ✓ Perform a document review as part of Constructability to specifically to identify potential leak conditions that may present a risk:
 1. Reviewing use of flashings, window details, expansion joints, roof penetrations, locations for drains, parapet details, penetrations, etc.
 2. Conducting a curb study on interior and exterior to identify locations where curbs can provide effective protection.
 3. Identifying temporary protection requirements including temporary roofs.
 4. Reviewing construction details and materials in wet areas (i.e. showers, laundry, toilet rooms, kitchens, and mechanical rooms).

Moisture Control Plan

Date Created:

- ✓ Peer Reviews can be scheduled with outside consultants to focus on potential water infiltration exposures. Including a Vapor Control expert. A report should be issued and forwarded to the Owner and Architect.
- ✓ Recognize and properly evaluate any building envelope value engineering suggestions. Focus on enhancement the performance of the exterior wall. Any modifications or changes must be incorporated onto the documents.

⇒ **Do not allow changes to inferior products or system to save money associated with the exterior enclosure or the roof.**

- ✓ Written Notification – Notify Owner and Architect on questionable details and design issues, with a specific list of items requiring further evaluation.

Mock-up Plan

- ✓ Mock-ups – Prepare a **Mock-up Plan** that includes focus on the exterior enclosure and include appropriate water test(s) of exterior walls.
- ✓ Complete mock-ups early to allow time to correct or modify details.
- ✓ Insist on a mock-up of the entire enclosure to capture all the potential field conditions, intersections, terminations, and joints on the exterior.

Specific Drawing Review Ideas

- ✓ Review flashing details (for missing flashings) on drawings. Focus on end dams, changes in plane, intersections, window and other penetrations.
- ✓ Review specifications and details for dealing with and controlling secondary water that enters wall cavities. Use slotted weep screens in cavity walls.
- ✓ Review all punched window and curtainwall details for coordination with adjacent wall systems and wall cavities. Trace the drainage pattern of water through the system.
- ✓ Look for insulation shown directly above the ceiling line. The space between the roof and the ceiling becomes unconditioned with no circulation (revise).
- ✓ Check that air intake plenums are designed with drains and that drains are piped to the building drainage system.
- ✓ Review perimeter roof parapets to develop detail to complete these areas early. This is a major source of leaks during construction. Coordinate with locations for temporary roofs.
- ✓ Review roof plans for slopes, custom details not included, curbs at openings and stair/elevator enclosures, concrete pads at mechanical equipment, etc.
- ✓ Verify location and interface/connection of roof vapor barrier and exterior wall vapor barrier (should be integrated).

Moisture Control Plan

Date Created:

- ✓ Check that ductwork and chilled water piping that passes through an unconditioned space is insulated, including joints and elbows.
- ✓ Outside air should be designed so the air is dehumidified before being introduced into the building.
- ✓ Condensate traps should be designed for each piece of equipment. Incorrect sizing of traps will prohibit pans from draining and pads should be poured deep enough to allow for depth of the trap.
- ✓ HVAC systems should be designed to bring in more air than they exhaust. Building under negative pressure will allow unconditioned moist outside air to be pulled in through walls and doors. **"Buildings should Blow not Suck."**

3. Construction and Closeout Procedures

Prevention Tips

During actual construction, the following are ideas to mitigate potential exposures to moisture and make part of your plan:

General Items

- ✓ Review exterior elevations and roof areas and identify areas for temporary protection during construction (openings, open bays, manlift bays, etc.)
- ✓ Create key target milestone dates on the schedule associated with exposures including metrics for tracking material deliveries, exterior close-in, roof completion, climatize building for finishes, start-up HVAC, etc.
- ✓ Review the work in place daily for compliance with design and issue Correction Notices when required. **Closeout all Correction Notices.**
- ✓ Daily walk through to detect water intrusion, leaks, sprinkler heads, water left on floor by trades, especially after a rain.
- ✓ Review routing of construction traffic, disposal of debris, partitioning off areas for climate control, and measuring moisture before installation.

Site Logistics and Drainage

- ✓ Review SWPPP Plans for specific areas for compliance. These provisions typically must be maintained regardless of a Moisture Control Plan. Coordinate these SWPPP requirements with your plan.
- ✓ Review grading plans, create sheet flow to control surface water and allow storm water to be collected in the permanent drainage system.
- ✓ Establish temporary grades that allow water to flow away from the building
- ✓ Consider placing waste slabs or drainage rock at main points of entry

Moisture Control Plan

Date Created:

Foundations

- ✓ Review water table to identify exposure during foundations. Plan should address measures to pump out and collect water and provide waterproofing.
- ✓ Seal foundation penetrations properly and check regularly.
- ✓ Connect foundation drainage to main storm system as early as you can.
- ✓ Prevent water from being trapped under foundations and SOG.
- ✓ Create means of collecting and pumping storm water prior to permanent system being installed.

Roofing Systems

- ✓ Conduct a pre-roofing conference with subcontractor and manufacturer for review of field conditions, installation procedures and specific details.
- ✓ Use manufacturer representatives for inspections during installation.
- ✓ Install temporary roofs as needed to keep shafts dry prior to final roof.
- ✓ Include adequate drainage and tie-in roof drains to storm system. Inspect roof drains regularly.
- ✓ Add Temporary enclosures at tops of elevator shafts, open stair shafts, duct shafts, and roof openings.
- ✓ Inspect roof under-layment for damage prior to roofing.
- ✓ Perform the work during dry weather conditions (as required).
- ✓ Coordinate paver and walk pad layout for access to all rooftop equipment.
- ✓ Complete as much work as possible on roofs to keep construction traffic off of the completed roof (damage issue).

Building Enclosure

- ✓ Inspect locations of weep and secondary water control gutters.
- ✓ Verify control and expansion joints are detailed and located per specification.
- ✓ Inspect fire safing, fireproofing, building insulation for water damage prior to covering with final materials.
- ✓ Verify 2 lines of defense in exterior wall, prime joints to ensure sealant adhesion, and caulk exterior wall soon after to eliminate water infiltration.
- ✓ Field water test completed areas in presence of architect and/or exterior wall consultant. Recommend water test prior to start of finishes.
- ✓ Inspect for complete installation of flashings (through-wall and roof, proper profiles). Have a checklist and get a sign-off from trades.

Moisture Control Plan

Date Created:

- ✓ Close off building parapet joint to the roof either temporarily or permanent. This is a common leak exposure.

Mechanical Systems

- ✓ Dry the chilled water and condenser water piping before insulation.
- ✓ Pressure test water piping systems prior to being covered to verify that there are no existing leaks (part of specification).
- ✓ Protect duct from dirt and moisture, seal ends of lined duct, and never install insulation on wet ductwork or piping
- ✓ Start-up HVAC systems earlier to dry out building and provide ventilation. Run HVAC systems continuously once they have been started.
- ✓ Check units regularly for moisture and/or dirt within the unit. Inspect for any signs of water damage prior to installation.
- ✓ Ensure that all equipment has condensate drains, pans, and traps and have indirect connections to the drains.
- ✓ Check for slope on condensate lines and for traps in condensate pans to avoid system water being pulled back through the pipe.
- ✓ Install "construction" filters on all HVAC units – replace as needed.
- ✓ Add dehumidification equipment or devices temporarily or permanent to monitor humidity levels at critical areas.
- ✓ Review sequence of operations for proper shut downs and controls.
- ✓ Check that exposed ductwork on roof is water tight including all supports and roof penetrations below equipment.
- ✓ Ventilate enclosed shafts to keep air moving. Install fan(s) at bottom of selected shafts.

Interior Finishes

- ✓ Require subcontractor submit a material stocking plan.
- ✓ Properly store drywall. Keep drywall off of the surface of concrete floors. Submit a stocking plan with proposed delivery dates for approval.
- ✓ Test building humidity prior to start of work, test during construction and test after work is complete.
- ✓ Acclimate finish materials to the building environment prior to installing.
- ✓ Make sure that construction debris is cleaned-up regularly, vacuum bottom track of walls before closing up.
- ✓ Consider holding drywall up ½" from the floor in certain areas that could be subject to flooding (at shafts).

Moisture Control Plan

Date Created:

- ✓ Develop a program for preventing the generation of excessive dust around finishes. Consider 1) tarp off areas, 2) isolate cutting/mixing from installation, 3) wet walk-off mats, 4) exhaust dust to the outside, and 5) control wet concrete cutting with vacuums and squeegees.

Weather Preparedness

- ✓ Identify a staff person to check weather reports on a regular basis.
- ✓ Establish a weather preparedness team with responsibilities assigned to each person with emergency phone numbers.
- ✓ Identify certain areas of building to be inspected by each member of the team for exposures in case of rain (keep a labor crew on stand by).
- ✓ Make provisions to connect all drains, gutters and downspouts to avoid flooding of areas. Temporary connections are acceptable.

Water Events

- ✓ Significant Water Events are to be reported to The Risk Management Department (as well as the Builder's Risk carrier). Clean-up, appropriate drying of effected areas (including enclosed shafts), and removal of wet materials is critical to mold prevention.
- ✓ Time is of the essence and actions must be in-place within 24 hours, dried or removed within 48 hours. Monitoring (visual) of areas for a minimum of 7 days with moisture readings below acceptable ranges for the specific building materials, before closing-up and replacing.

Water Damage Protocol

If you have water damage or water has entered the building DURING CONSTRUCTION, the following are steps for your consideration.

- 1) Notify your Safety Director - who in turn should **contact The Risk Management Department**.
- 2) Track all steps in writing, similar to an accident report. It is important to make sure that you:
 - a. **Document** the cause of infiltration including the parties at fault
 - b. **Document** the cleanup and fix
 - c. **Document** that the results are acceptable
- 3) **Stop the water source**
- 4) Notify key parties that may be involved of the incident, including:
 - a. Party or parties at fault

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- b. Turner Casualty and Surety
 - c. General liability and/or Builder's Risk carriers
- 5) **Inventory the damage.** Take photos and show the extent on drawings. Prepare a Water Infiltration Report: include date, location, and photos. Include cause, extent of damage, and action required.
 - a. Consider engaging a specialized consultant
 - b. Confirm or certify that the situation has been properly addressed
- 6) **Clean up all water quickly.** A prompt response can prevent or limit further damage or mold growth. Extensive water damage may need a water removal contractor.
- 7) Inspect materials that are damaged and determine what should be replaced immediately and what you will attempt to dry out.
 - a. During dry out, do not forget areas that may not be easy to see or reach, such as sub-floors, ceiling plenums, and wall cavities.
 - b. Some items, after getting wet, will not have the same characteristics when dried (i.e. batt insulation and ceiling tiles). These items may need to be replaced.
 - c. Some items, including drywall, wood floor, and carpet, can be restored to new if dried properly and quickly.
- 8) REMEMBER... Time is your enemy regarding mold growth in water damage area, so when you encounter water damage, you should remember: **"WHEN IN DOUBT, CUT IT OUT."**
- 9) **Permanently fix** the source of water infiltration. **This is a MUST DO!**
- 10) Resume construction Only after the following:
 - a. Source of water infiltration is cut off
 - b. Humidity is returned to normal for several consecutive days. In conditioned space, the goal is lower than 60% humidity.
 - c. Receiving written certification the issue was properly addressed before resuming work (also if a consultant has been engaged).
 - d. **Closeout the Report with The Risk Management Department.**

Remediation

- ✓ This is a general procedure and guideline if mold becomes present on the project and the process for remediation. **A formal remediation plan will be required and issued by The Risk Management Department.**
- ✓ When evidence of Mold is discovered on any Turner project, be it pre-existing conditions, current construction or post-construction, a **call into The Risk Management Department** by the Safety Director or the OM **is required immediately.**

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- ✓ Complete the Mold Investigation Report, which must be faxed and/or emailed to Peckar & Abramson with copy to The Risk Management Department. Take Picture of affected area. **Timeliness of reporting is critical!**
- ✓ Maintain “Attorney Client Privilege” by sending the report directly to Peckar & Abramson (P&A), along with a copy to The Risk Management Department. Note: Attorney Client Privilege on all correspondence, including emails. Keep the information brief, to the point on facts, not subjective please.
- ✓ Do not copy anyone else unless authorized by P&A/The Risk Management Department. This includes most importantly the Owner. The Risk Management Department will direct the Business Unit (BU) on notifications to involved parties and P&A will assist in correspondence to the client. P&A/The Risk Management Department will assist the BU in communications appropriate to keep involved parties (keeping owner informed of status and follow-up actions).

Closeout Documentation

- ✓ Confirm building is free of excess humidity at Turnover (less than 60%).
- ✓ Send Closeout Letter to Owner stating the suggested guidelines for proper maintenance, cleaning, and prevention measures to be taken.
- ✓ As part of closeout letter, suggest that you advise the measures taken during construction and at turnover to prevent potential for mold growth.
- ✓ Provide a suggested maintenance program for critical areas of the building and include in your closeout information with a schedule for maintenance and form to be filled out and maintained by the Owner’s maintenance staff.
- ✓ Test and document humidity levels. Test different floors and areas. Take final readings on humidity levels to document the moisture at Turnover.
- ✓ Document existing conditions (with pictures if required) on how conditions were left at the completion of the project.
 1. Verify and document that condensate pans are clean and condensate drain piping is working.
 2. Verify that all filters on air handling equipment are clean.
 3. Verify that all corrections or non-conformance items are signed-off.
 4. Verify that testing and balancing report is complete (all correction items have been resolved).

Appendix C: Spill Prevention and Control Plan for Construction

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1.1 PURPOSE OF THE PLAN

This Spill Prevention and Control Plan (Plan) was prepared for the _____ project. The Plan should be used as a reference guide and will accompany the project specifications and plans and the Project Specific Spill Response Flow Chart. The main purpose of the Plan is to help contractor personnel prepare for and respond quickly and safely to hazardous spill incidents. If implemented appropriately, the plan will ensure an effective, comprehensive response to prevent injury or damage to the construction personnel, public, and environment during the project.

1.2 Project Definition

The _____ project is defined on the construction drawings and _____.

1.3 Uses and Organization of the Plan

The Plan is to be used to inform Contractors of the potential hazardous materials, contamination prevention, emergency spill response, and responsibilities associated with hazardous materials during construction. Contractors are expected to comply with all procedures described in this document, as well as explicit instructions given by Turner EH&S personnel or Superintendents in emergency situations. Liability for failure to do so rests with the contractor. Any expense incurred by Turner during project construction that results from contractor non-compliance with spill procedures, response, or damage will be the responsibility of the contractor.

The Plan outlines the responsibilities and procedures when responding to hazardous spills involving Turner employees or subcontractors on the project. The Plan contents include:

1. General procedures for effective management of spill response within the geographic boundaries of the Plan.
2. Identification of management, equipment, and other resources that can be used during a response operation.
3. Specific spill response procedures that provide guidance for spill response planning and operations.
4. Specific notification and reporting procedures for contacting inspectors, management, and governing agencies.

A copy of this Plan shall be distributed to all entities and contractors that may provide assistance during spill response activities.

2.1 HAZARDS ASSESSMENT

The hazardous materials that may be on site during construction include those usually associated with the operation and maintenance of vehicles and machinery, and include diesel fuel, gasoline, hydraulic fluid, brake fluid, antifreeze, and lubricants. Other materials considered

hazardous are chemicals used during construction and in portable toilets. There is also the possibility of encountering buried hazardous or toxic materials during construction operations. Each of these hazards is discussed briefly below.

2.2 Vehicle Fluids

The materials associated with vehicle operation and maintenance is hazardous to humans, wildlife, and sensitive environments. Spills of diesel fuel, gasoline, hydraulic fluid, brake fluid, engine oil, lubricants, etc. are considered serious and emergency response procedures must be initiated (See Section 4.2.1). These materials can be toxic to skin, eyes, respiratory system, and internal organs. Toxicity can be transmitted in the form of liquid or vapor. These materials may also be flammable and combustible, and proper precautions must be used in handling spills. Antifreeze, Freon, and other non-petroleum products are also hazardous toxic substances. The same spill prevention and response actions are to be employed with spills of these materials.

Potential sources of spills of vehicle fluids include mobile refueling trucks and construction vehicles and equipment. Potential causes of vehicle fluid spills include: emergency ruptures in fuel tanks or construction equipment; overflow of fuel from the tank during the refueling of equipment; seepage of fuel or lubricants during normal operation or storage; spills of oil or hydraulic fluid, etc. during on-site vehicle and equipment servicing; vehicle accidents; and natural disasters.

2.3 Chemical Toilets

Proper disposal and disinfection of human waste at the construction site is required. Human waste may contain infectious bacteria, pathogens, or other health hazards. Waste must be contained in portable toilets that receive periodic cleaning and disposal of waste. Chemicals used in toilets are also hazardous to wildlife and sensitive environments. Portable chemical toilets could overflow, if not pumped regularly or they could spill if dropped or overturned during moving. Portable toilets must be tied or weighted down to prevent overturning and causing a release.

2.4 Unknown Hazardous Materials

The potential exists for encountering unknown buried or illegally deposited hazardous materials on the project. These may take the form of underground storage tanks, utility pipelines, unmarked drums, septic drain fields and tanks, asbestos pipe, etc. Construction personnel shall be alert to the indicators of buried hazardous waste, including partially buried unidentified drums or pipe; encountering unusual resistance with equipment; or encountering unusual or unpleasant odors during construction. If any of these indicators are observed, construction shall stop until the identity of the material encountered is assessed. The hazard associated with unknown buried materials must be assumed to be high due to the unknown nature of the material. Any unknown hazardous materials encountered require special handling and emergency response procedures (See Section 4.2.3).

2.5 Hazardous Materials

The potential also exists for hazardous materials to exist in the form of chemicals (solvents, cleaning fluids, concrete form oil, paint, fuels, propane, mercury, PCB's, etc.) brought onto the project by subcontractors. Each sub trade can bring chemicals onto the site during their scope of work and create a hazard for other contractors or themselves if these chemicals are not monitored and stored in proper containers per OSHA regulations. Construction personnel shall be alert to the indicators of hazardous materials and chemicals and be aware of unusual or unpleasant odors during construction. If any of these indicators are observed, construction shall stop until the identity of the material encountered is assessed. The hazard associated with chemicals must be assumed to be high and treated with the utmost caution until the MSDS proves otherwise. Any unknown, known, or unlabeled hazardous materials encountered require special handling and emergency response procedures (See Section 4.2.3).

3.1 SPILL PREVENTION AND CONTAINMENT

3.2 Spill Prevention Measures

The number one defense against spills is prevention. The easiest way to prevent spills is to:

- Conduct proper vehicle maintenance and inspections,
- Never place vehicles or equipment in or near sensitive environments,
- Store all materials in protected and approved areas,
- Store all chemicals in approved and labeled containers and follow the OSHA hazard communication standard/GHS, and
- Train workers on the proper storage, handling, and treatment of all hazardous chemicals on the project.

3.2.1 Vehicle Fluids

Personnel who operate vehicles or equipment shall be trained to maintain and inspect their vehicles and equipment. All machinery found to be a potential source of a future spill shall be removed from the construction site and repaired. Vehicles with chronic or continuous leaks must be removed from the construction site and repaired before returning to operations. No leaking of any material from equipment or vehicles will be tolerated on the job site. The contractor shall make every effort to ensure compliance prior to an incident.

Contractors are solely responsible for any spills of hazardous materials and the subsequent cleanup, disposal of waste, and restoration of any contaminated areas. Hazardous materials must be disposed of properly.

Restrictions will be placed on all equipment refueling, servicing, and maintenance supplies and activities. All maintenance materials, oils, grease, lubricants, antifreeze, etc. shall be stored per OSHA regulations. If they are required during field operations, then they shall be placed in a designated area away from site activities and in an approved storage container.

No refueling, storage, servicing, or maintenance of equipment shall take place within 100 feet of drainage or sensitive environmental resources to reduce the potential of contamination by spills. No refueling or servicing shall be done without absorbent material or drip pans properly placed to contain spilled fuel. Any fluids drained from the machinery during servicing shall be collected in leak-proof containers and taken to an appropriate disposal or recycling facility. If these activities result in damage or accumulation of product on the soil, it must be disposed of as hazardous waste (see Section 5.1). Under no circumstances shall contaminated soil be added to a spoils pile and transported to a regular disposal site.

During construction, all vehicles and equipment required on-site shall be parked or stored at least 100 feet away from rivers, streams, wetlands, known archaeological sites, and any other sensitive resource areas. All wash down activities must be accomplished away from sensitive environmental resources.

3.2.2 Chemical Toilets

Personnel who service chemical toilets shall be hired based on reputation as a reliable provider of the equipment. Any chemical toilets with leaks must be removed from the construction site. The provider shall make every effort to ensure compliance prior to an incident.

The provider of the chemical toilets are solely responsible for cleaning of the toilets and associated hazardous material and disposal of waste.

Restrictions will be placed on where servicing and maintenance activities occur. If possible, chemical toilets shall be cleaned in a designated area away from site activities.

No servicing or maintenance of chemical toilets shall take place within 100 feet of drainage or sensitive environmental resources to reduce the potential of contamination by spills. Any fluids leaking onto the ground will be cleaned up properly. If these activities result in damage or accumulation of product on the soil, it must be disposed of as hazardous waste (see Section 5.1). Under no circumstances shall contaminated soil be added to a spoils pile and transported to a regular disposal site. Portable toilets are to be kept inside the jobsite fence. The use of half high/high rise portable toilets are not permitted on any Turner project.

3.2.3 Unknown Hazardous Materials

Awareness of the potential for encountering unknown hazardous materials, and early recognition of potentially hazardous materials are the best prevention for avoiding emergencies. Contractors shall visually inspect the alignment prior to trenching activities for any evidence of hazardous waste storage appearing above the surface of the soil. Indicators of buried materials include: old vent pipes; concrete pads; portions of drums; pipes; tanks; discolored or stained soils; and evidence of dumping. Contractors must also be alert to encountering buried hazardous waste while trenching. If any unusual objects are hit, or unusual odors are encountered while trenching, contractors must investigate the source before proceeding. Should underground tanks or pipelines be encountered, the possibility exists for flammable materials, toxic fumes, or explosion.

3.2.4 Hazardous Materials

Chemicals pose a wide range of health hazards (such as irritation, sensitization, and carcinogenicity) and physical hazards (such as flammability, corrosion, and reactivity). OSHA's Hazard Communication Standard/GHS) is designed to ensure that employers provide information about these hazards and associated protective measures to their workers. Once you have identified your existing and potential hazards, you are to implement the systems that prevent or control those hazards. Whenever possible, hazards should be eliminated. Sometimes that can be done through substitution of a less toxic material or engineering controls. When you cannot eliminate hazards, systems should be established to control them.

Actions to consider in controlling hazards and preventing a spill:

- Set up safe work procedures based on an analysis of the hazards in your workplace and ensure that employees understand and follow them.
- Store all chemicals in approved and correctly labeled containers. Never leave chemicals unattended.
- Where necessary, ensure that personal protective equipment (PPE) is used and that your employees know why they need it, how to use it and how to maintain it.
- Provide for regular equipment maintenance to prevent breakdowns that can create hazards. Ensure that preventive and regular maintenance are tracked to completion.
- If a spill does occur, instruct employees to notify a supervisor immediately and follow this spill prevention plan.

3.2 Spill Containment Measures

Several measures can be taken to prepare for quick and effective containment of any potential spills prior to undertaking construction activities. First and foremost, each contractor shall keep adequate supplies of spill containment equipment at the construction sites. These shall include both specialized spill containment equipment (listed below in Section 3.3 "Spill Containment Equipment") and excess supplies of straw bales, silt fencing, and portable vacuum pumps, to be available as needed to comply with EPA's Construction General Permit and Best Management Practices.

Other spill containment measures include using drip pans and/or absorbent materials underneath vehicles and equipment every time refueling, servicing, or maintenance activities are undertaken. All fuel storage tanks shall have double containment walls or a secondary containment system in the event of a leak or discharge.

3.3 Spill Containment Equipment

The following equipment shall be on-site with each construction crew in the event prevention techniques are not adequate and a spill does occur.

1. Emergency Spill Kit - (general contents may vary with manufacturer) contains at a minimum:

- a) Three sorbent socks
- b) Three disposal bags and ties
- c) One pair of safety glasses
- d) One pair of rubber gloves
- e) One sorbent drip pillow
- f) Sorbent pads, 18" x 18"
- g) One Emergency Response Guide Book
- h) Two sorbent spill pillows, 24" x 18"
- i) four hazardous labels
- j) One bag Lite-Dri Absorbent (or equal)
- k) Dedicated shovel and broom

2. Absorbent Pads - These pads (18" x 18") are 100% polypropylene fabric that absorbs 11 times their weight in liquids. Pads absorb 10 gallons of liquid per bale of 100 pads.

3. Absorbent Skimmers Booms for wetland operations - Skimmers will float indefinitely before or after saturation with oils. Skimmers are made of 100% meltdown polypropylene fill that repels water. They absorb ten times their weight and can be used in lakes, streams, or on the ground. Each skimmer has a harness kit attached that is made of yellow polypropylene rope with grommets that are used to connect skimmers. Each boom is 8" in. x 10 ft. No absorbent skimmer booms will be required if no water bodies are within the project.

4. One 55 gallon clean drum, lined with polypropylene material (over pack). The drum can be used to store spill response materials until needed. When a spill occurs, all soiled pads, pillows, skimmers, contaminated soil, etc. shall be placed in the drum for disposal after the cleanup is accomplished.

It is the contractor's responsibility to make sure these materials are on-site at all times and personnel are trained in their use and disposal prior to spill response.

4.1 EMERGENCY RESPONSE PROCEDURES

4.2 Initial Notification and Activation

A formal notification process shall be initiated when a spill or potential spill is first observed. Immediate actions are necessary. The first individual who discovers a spill (spill observer) will be responsible for initiating notification and response procedures. All personnel responsible for responding to spills must have completed training in recognition and response to spills of hazardous materials. The contractor is responsible for providing spill recognition and response

training for all contractor employees. Turner will be responsible for providing spill recognition and response training for all their project personnel. The project personnel who must be notified and will assist in hazardous spill response include, but are not limited to:

1. Spill Observer
2. Project Safety Manager and/or Project Superintendent
3. 3rd Party Industrial Hygiene Company
5. Project Executive
6. Spill Response Team

General responsibilities of the designated personnel are outlined as follows:

Spill Observer is the first person to witness a spill. They must immediately:

1. Make an assessment of the incident as observed;
2. If the incident can be safely controlled, take steps to do so. For example, shut off the source of spill;
3. Notify the Project Safety Manager and Turner Superintendent. Provide as much information as possible;

Project Safety Manager and/or Project Superintendent will initiate the following actions:

1. Notify the Project Executive and Business Unit Safety Director;
2. Make sure all personnel are removed from the spill area;
3. Take immediate steps to minimize any threat to public safety (cordon off the spill area); and
4. Monitor personnel
5. Notify the Contractor's Job Superintendent, and
6. Secure the source of the spill, if safely possible to do so; and
7. Maintain close observation of the spill.
8. Determine if the spill response team is needed to accomplish cleanup;
9. Determine if additional spill response support is necessary;
10. Coordinate with the Project Executive and BUSD to initiate spill response;
11. Initiate Spill Response Team;

12. Complete containment, cleanup and disposal of hazardous waste;
13. Complete Spill Notification Checklist (Appendix A); and
14. Complete all reporting to Risk Management and Insurance Company.

3rd Party Industrial Hygiene Company will:

1. Work with the project team to test and monitor the area as required

Project Executive and BUSD will:

1. Coordinate with the project team regarding level of spill response required;
2. Notify the Crisis hotline if necessary,
3. Notify governmental agencies if necessary.

Spill Response Team is Contractor employees or outside companies hired by the Contractor who are designated to respond to spills. The Spill Response Team will:

1. Follow the Spill Response protocol they assist in developing with the 3rd party IH;
2. Follow the specific spill response procedures outlined in the Plan; and
3. Take direction from the Contractor's Representative for additional actions needed for spill response.

4.3 Specific Response Procedures

Specific response procedures have been developed for various kinds of spills including vehicle fluid spills, chemical toilet, hazardous materials and chemicals, and discovery of an unknown hazardous material. Some response procedures common to all spills are to keep people away from the spilled material, secure the source of the spill if this can be done safely, and determine the material spilled and the volume, extent, and potential for danger of the spill.

The first step at the discovery of any spill is keep people away from the spilled material. Close off the area and do not leave the site unattended. Securing the source of the spill is an extremely important step in response activities. However, a source should be secured only if it can be performed safely without risk to human life or health. Steps to be taken to secure the source include turning off machinery, clamping or disabling hoses, etc.

The second step at the discovery of any spill is to fill out the Spill Notification Checklist (Appendix A). Another key element in early response to all spills is determining the type of material spilled and the volume and extent of the spill. These facts should be determined as soon as possible in order to facilitate planning and initiate proper response operations. The volume will be needed to evaluate equipment and personnel needs, as well as requirements for storage and disposal of recovered waste. A rough estimate of the spill volume can be generated

from visual observation and source identification. Minor spills are those that have the least probability of environmental damage, not necessarily the smallest volume.

4.3.1 Vehicle and Machinery Spills

Incidents of loss of a petroleum product from equipment or vehicles shall be considered a spill. After the spill has been flagged to warn people to stay away, the volume and extent of the spill estimated, and initial notification procedures accomplished, the spill must be confined. Do not handle materials without wearing protective clothing (i.e.; gloves, etc.). Use a 3rd party expert to determine the level of cleanup and response team necessary to handle the incident.

Generally follow the steps listed below:

1. When the spill is discovered, begin making notations on the Spill Notification Checklist.
 2. Determine if the Spill Team Response is needed to complete cleanup.
 - a) If the answer is NO, submit incident reports to BUSD and the BU Claims Manager.
 - b) If the answer is YES, go to step 3.
 3. Activate the local spill response team. Generally these are personnel designated on a construction crew, but the team may be supplemented by other contractor personnel.
 4. Determine if additional cleanup contractors are necessary for a major incident.
 - a) If the answer is NO and the incident is determined to be a minor spill, conduct internal cleanup, review and evaluate the cleanup, determine if the cleanup is beyond the local response team ability or equipment; if the answer is NO, complete the cleanup, restore the damaged areas, properly dispose of all waste, and submit incident reports to the BUSD and the BU Claims Manager.
- If during cleanup, the incident is determined to be beyond the abilities of the local response team, hire additional contractors or 3rd party expert to help with the cleanup.
- b) If the answer is YES, hire additional contractors to help with the cleanup.
 5. The local spill response team shall coordinate cleanup activities with the Project Superintendent and Site Safety manager, and agencies as appropriate.
 6. Arrange for proper testing (if substance is unknown) and disposal of all waste.
 7. Closely monitor all cleanup activities.
 8. Ensure proper disposal of absorbent materials, containers, and soils, as required.
 9. Complete the cleanup and restore damaged areas.
 10. Submit incident reports to BUSD and BU Claims Manager.

Cleanup may range from very simple removal of minor spills, to installation of skimmers around large spills or between sensitive areas and spills for longer, prolonged cleanups. Cleanups can be on pavement or on soil surfaces. Contractor personnel shall be trained in the proper use of the cleanup materials.

All spills on pavement shall be thoroughly removed with absorbent socks, pillows, or pads and Lite-Dry (or equal) granules. After absorption the granules shall also be removed. All materials used in cleanup, shall then become hazardous waste. Place all materials in a 55 gallon lined drum, seal it, and label the contents. The drum must then be sent to a designated disposal site. A chain of custody form must accompany the drum (provided by Disposal Company). All Projects shall determine a disposal site in advance of a spill incident. (Turner does not sign manifests at any time for any reason)

All spills on soil require the same treatment as on pavement, with the exception that contaminated soil is also part of the generated hazardous waste and must be handled as such and removed from the site. Absorbent materials shall remain in use until it has been determined by the 3rd Party IH that a spill cleanup is complete and the incident is closed.

4.3.2 Chemical Toilet Spill

Chemical toilets are self-contained and pose little threat to the construction site. Chemicals used in portable toilets are biodegradable and generally non-toxic to humans. However, they can pose a danger to wildlife and sensitive habitats by virtue of heavy concentration of chemicals and human waste. They shall be pumped out at least one time per week. Toilets shall never be placed in or near an environmentally sensitive area.

In the unlikely event that a portable toilet spills during relocation, the same procedures for other hazardous material spills shall be used. Disposal of absorbent materials shall be handled the same as other spills, with proper disposal by the toilet supply company. Determine the level of cleanup and response team necessary to handle the incident.

4.3.3 Unknown or Known Hazardous Materials

There is always a possibility that personnel may unexpectedly encounter a hazardous situation when working on the project. The most common materials that may be encountered during excavation would be buried underground tanks, radon gas, utility pipelines, drums, sewer lines, pesticides, or asbestos pipe.

The most common encountered during construction of the project would be asbestos, lead, fuels, solvents, PCB's, mercury, or chemical used by subcontractors in the performance of their work.

If there is *any* doubt regarding the degree of hazard of a particular circumstance, and personnel are unsure as to what measures to take, the following steps shall be taken immediately to ensure the health and safety of the personnel involved.

1. STOP WORK IMMEDIATELY.

- Personnel shall remove themselves from the hazard or suspected area.

2. OBTAIN AS MANY DETAILS OF THE SITUATION AS POSSIBLE, WITHOUT ENDANGERING YOURSELF OR OTHERS.

a) While obtaining information details:

- Never enter confined spaces (i.e.; excavation trench).
- Do not handle any materials.
- Extinguish all flames (i.e.; welders, torches, cigarettes).
- Do not remove objects from trenches or refill excavated area.

b) Things to note:

- Site location/address or closest Cross Street and station.
- What was encountered (i.e.; tank, drum, pipe, sewage, etc.).
- Approximate size of object.
- Odors or any discoloring of soils.
- Material object is made of (i.e. steel, fiberglass, plastic, etc.).
- Was there or is there a potential for a spill, release, discharge, etc. of toxic or hazardous liquid, gas, vapor, dust, or mist?
- Estimated amount of chemical released.

3. CONTACT SUPERVISORS IMMEDIATELY (Turner Project Superintendent, Site Safety Manager, and BUSD if a major spill)

4. IF YOU MUST LEAVE THE SITE TO NOTIFY SUPERVISORS:

- Appoint personnel to guard the site until you return.
- Mark off area of concern (i.e. flagging, cones, etc.).
- Do not allow anyone to enter the area.

Following these actions, personnel shall be given proper direction from supervisors on how to proceed. By simply removing personnel from the hazard and maintaining good communications, many accidents can be avoided. Remember if there is *any* doubt about the safety of on-site employees or the public in a particular circumstance initiate the proceeding course of action. Determine the level of cleanup and response team necessary to handle the incident and notify appropriate BU management.

4.3 Reporting of Major Spills

Upon recognition of a major spill, notification is critical to immediate response. The first notification shall be given to the nearest construction crew supervisor and the Turner Project Superintendent or Site Safety Manager so that appropriate spill response can begin immediately. After initial spill response has begun, notification and reporting to BU upper

management shall occur. The following guidelines should be followed when reporting major spills:

1. Never include information that has not been verified;
2. Never speculate as to the cause of the incident or make any acknowledgment of liability;
3. Do not delay reporting to the Turner Crisis Hotline because of incomplete information;
4. Notify persons/agencies and document notification and the content of the message; and
5. Complete the Spill Notification Checklist as information is confirmed (See Appendix A).

The agencies to be notified will vary depending on the spill location. Appendix A should contain a Project specific listing of the agencies requiring notification, along with contact names and numbers.

5.1 CLOSING OF THE SPILL INCIDENT

5.2 Disposal of Waste

Following the cleanup of a spill, the waste, absorbent materials, protective clothing, and any soil that has been contaminated must be removed to a designated hazardous waste disposal area. All contaminated materials shall be sealed in 55 gallon drums (or other container as recommended by the 3rd Party IH) and labeled with the contents. If the contaminant is unknown, a sample of the material must be collected and analyzed before disposal. (Turner does not sign manifests at any time for any reason)

A permit or approval in writing must be obtained prior to disposal of the drum. A copy of the permit and a chain-of-custody form (obtained from the disposal contractor or testing laboratory) must accompany the material and copies must be attached to the Spill Notification checklist. Project will use the previously identified disposal facility however, it is up to the 3rd Party hired to do clean up and disposal to perform sampling, testing, and coordination with landfills or a disposal company. Transporting hazardous waste is regulated by federal and state agencies under the Resource Conservation and Recovery Act (RCRA) and other statutes. The contractor is responsible for the proper disposal of all waste and understanding the responsibilities under federal and state statutes. Turner's name will not appear on the manifest. (Turner does not sign manifests at any time for any reason)

5.3 Final Reporting

Spill incidents that require cleanup must be reported on the Spill Notification Checklist. Notification must begin as soon as the incident occurs. The checklist shall be submitted to the BUSD and BU Claims Manager with a copy to Risk Management for a major spill and clean up. Forms must be submitted no longer than five days after an incident is closed. A copy of the permit or disposal approval and the chain-of custody for the disposal must be attached to the Spill Notification Checklist. The forms shall be reviewed and filed in the contractor's file. No exceptions.

If a situation arises involving an unknown hazardous material, the Spill Notification Checklist can be used to report the incident. This incident may require a very different approach to removing the hazard and the contractor may be required to remove the material. The incident must still be reported by the contractor.

5.4 Follow-up Investigation

A critique following a spill response is beneficial to evaluate the actions taken or omitted. Recommendations and suggested modifications will be made to prepare for the possibility of future spills. Should a contractor have an abnormally high incident of spills, corrective actions may become necessary? Contractors should consider the following examples of questions that are likely to be appropriate at each stage of a critique:

Detection

- Was the spill detected promptly?
- How was it detected and by whom?
- Could it have been detected earlier? How?
- Are any procedures available to consider which might aid in spill detection?

Notification

- Were proper procedures followed in notifying Turner Project Superintendent and Site Safety Manager?
- Agencies?
- BUSD, BU Claims Manager, project Executive, BU upper management?
- Risk Management?
- Were notifications prompt?
- Was management response appropriate?
- Was the Engineer notified promptly? If not, why not?

Assessment/Evaluation

- Was the magnitude of the problem assessed correctly at the start?
- What means were used for this assessment?
- Was there adequate measurement or estimation of the spill volume?
- What was the initial strategy for response to this spill?
- Is the strategy defined in the spill plan?
- How did the strategy evolve and change during this spill and how were these changes implemented?
- What caused such changes?
- Are there improvements needed? More training?

Response

- What steps were taken to mobilize spill countermeasures?

- What resources were mobilized?
- Was mobilization prompt?
- Could it have been speeded up or should it have been?
- How could this be improved?
- Were outside spill contractors needed and called in promptly?
- Was containment effective and prompt?
- How could it have been improved?

Command Structure

- Who was initially in charge of spill response?
- What sort of organization was initially setup?
- Was there adequate surveillance?
- Were communications adequate?
- What improvements are needed?
- Is more planning needed?
- What are the roles and effects of the various government agencies involved?
- Were government agencies adequately informed at all stages?
- Were too many agencies involved?
- Was there adequate agreement with the government agencies on cleanup criteria?
- How was this agreement developed?

All contractors and subcontractors are responsible for their actions. The Turner Project Superintendent will provide guidance and recommendations, if necessary. Contractors shall be liable for any costs incurred by Turner or the Owner as a result of their negligence regarding hazardous materials.

APPENDIX A

SPILL NOTIFICATION CONTACT LIST

The project is responsible for compiling the appropriate spill response agency contact information list.

ENTITY _____

CONTACT PHONE NO. _____

EMERGENCY _____

NOTE: In case of emergency call 911.

SPILL NOTIFICATION CHECKLIST

Date: _____ Time: _____

Name: Contractor: _____

Location/Station#: _____

Description of Spill (color, length, width, type): _____

Type of Product: _____

Estimated Quantity: _____

Source of Spill (vehicle, machine, etc.): _____

Describe initial containment procedures: _____

Weather Conditions: _____

Note if spill reached any body of water: _____

Responsible Party (who created the spill): _____

Insurance Company notified _____

Federal/State/Local agency notified: _____

Risk management (did the spill require notification of the Crisis Hotline and what is response) _____

Individuals notified of spill (include name, company, date, time and response): _____

Name of person completing the report: _____

Owner notified and included: _____ Name of individual who the spill was reported to:

Media Statement prepared (if necessary): _____

Appendix B

Project Specific Spill Response Flow Chart

Project will complete this for their specific process, procedure, and protocol.

Appendix E: Hazardous Energies Control and Lockout/Tagout Program

Summary:

This program applies to the installation, service, maintenance, or removal of any type of machinery, equipment, or components, in which the unexpected start-up or release of stored energy could cause injury.

1. Program Description
2. Scope
3. Definitions
4. Responsibilities
5. Program Components
6. Appendices

1. Program Description

It is our goal at Turner to control hazardous energies in the workplace to the greatest extent feasible. Turner has developed a Hazardous Energies Control and Lockout/Tagout Program to ensure that workers are protected from hazardous energies in the work environment. Turner/OSHA regulations require Turner to provide and maintain a Hazardous Energies Control and Lockout/Tagout Program for all operations where jobsite workers may be potentially exposed.

2. Scope

This program applies to the installation, service, maintenance, or removal of any type of machinery, equipment, or components, in which the unexpected start-up or release of stored energy could cause injury.

This program is applicable to all jobsite workers. The purpose of this program is to prevent injuries and accidents from occurring while:

- Servicing or maintaining systems, machinery or equipment that is capable of sudden energy releases; and
- Working on systems, machinery or equipment that is capable of storing hazardous energy.

Note: Stored energy may be in the form of electricity (capacitors), air pressure (pneumatic), liquid pressure (hydraulic), springs, or potential energy of position, but it not limited to the above.

This program requires a systematic approach to working on facility systems, servicing and maintaining equipment and machinery and strives to ensure the safety of all workers, and compliance with the applicable regulations. This approach involves: following approved and written equipment specific procedures to shut down and lock out equipment and machinery, dissipating all hazardous energy, blocking parts where necessary, and verifying that the energy has been controlled before all work is initiated.

Persons who fail to follow established written procedures for lockout of equipment and machinery, or who fail to take appropriate steps to protect the safety of all persons who are performing work under locked out conditions are subject to disciplinary action. This includes persons performing lockout that are not previously trained and authorized, working on the jobsite, who do not follow established policies and procedures.

No employee shall install, service, remove, or perform electrical or mechanical maintenance on any electrical equipment or machinery until that equipment is turned off or de-energized, all stored hazardous energy has been bled down, dissipated, or blocked off, and the machinery has been locked out and blocked as provided in the section below.

Such energized work may be performed on circuits and systems operating at a sustained voltage of less than 30 volts or where there is no risk of exposure to electric arcs or burns without locking out the electrical energy source.

Lockout is required for mechanical service and maintenance operations if the procedures to be performed could involve employee exposure to energized electrical parts, to machinery that could unexpectedly start up, or to a stored energy source on the equipment or machinery.

Servicing or maintenance on equipment that is powered through an electrical cord and plug shall be worked on with the cord unplugged. The person performing the work must have exclusive control of the plug at all times. If necessary, this can be accomplished by applying some form of a plug or cord cap lock-over device that is secured with the worker's personal lock and tag.

3. Definitions

Affected and Other Employees – Any worker in an office, industrial setting, or construction site, who works around outlets, electrical panels, or electrical switches, and whose job requires them to be near or around the hazard zone (but not within the hazard zone) when equipment is being serviced or maintained under a locked out or tagged-out condition. For example, a construction worker that must stay near the machine during a lockout is classified as an Affected Employee. Office staff working on computers and electrical equipment when nearby equipment is being serviced or maintained during a lockout are also classified as Affected Employees. The Affected Employee must be instructed never to attempt to re-start or re-activate equipment that is locked out or tagged out.

See also the definition for “Authorized Lockout/Tagout Employee”

Assigned Individual Lock – A padlock or combination lock issued to an employee for whom no other person has the key, combination, or means of opening without using destructive force. The lock shall be uniquely identified and shall not be used for any other purpose.

Authorized Lockout/Tagout Employee – A person who has completed the required hazardous energy control training and is authorized to lockout or tagout a specific machine or equipment to perform service or maintenance. A person must be certified as an Authorized Lockout/Tagout Employee in order to apply a lock or tag to control hazardous energy.

“Capable of Being Locked Out” – An energy isolating device will be considered capable of being locked out if it is designed with a hasp or other means of attachment to which, a lock can be affixed, or if it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out, if
lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or
permanently alter its energy control capability. An appropriate lockout attachment, designed for such an application, is available through a supplier.

Energy Forms –

- **Electrical** – Low voltage is when the potential is greater than 30 volts RMS or direct current, but less than 600 volts; high voltage is when the potential is greater than 600 volts; high current is when 25 amperes or greater exists at any voltage.
- **Chemical** – explosion, pressure, extreme heat, fire, corrosive, reactive, oxidizer, or toxic,
- **Pressure** – greater than one atmosphere, can be in the form of pneumatic pressure, hydraulic pressure, or liquid pressure,
- **Vacuum** – less than one atmosphere,
- **Ionizing Radiation** – greater than 3 milliRem per hour,
- **Non-Ionizing Radiation** – Ultraviolet reader than the ACGIH TLV, Infrared, RF/Microwave, Laser, Magnetic Fields,
- **Potential** – Flywheels, springs, differences in elevation, elevated parts that could drop, capacitors, batteries.

Energy Isolating Device – A mechanism device located at an energy control point that positively blocks the flow of energy and can be locked in the “safe” position. Push buttons, selector switches, software controls, interlocks, and other control circuit devices are not considered energy isolating devices.

Hazardous Energy – Energy, if not controlled, of such a magnitude that it is capable of causing harm to a person, death, or loss of resources.

Hazardous Energy Control – The process of systematically implementing mechanical means to prevent hazardous energy from flowing to a person. This includes using mechanical means to achieve the following conditions:

- **Isolated** – A condition where all sources of hazardous energy have been controlled by breaking the energy path so that the energy cannot flow to workers. The term “isolated” is commonly used with electrical circuits and fluid lines.
- **Dissipated** – A condition where all the stored energy has been reduced to a non-hazardous level. Most commonly used with energy storing devices such as capacitors, pressure receivers, or springs.

Blocked - A condition where a mechanical device is inserted into the energy path to physically prevent movement. Most commonly used with mechanical machinery or fluid filled lines.

Hazard Zone - The space around a source of hazardous energy where a person could be harmed if the hazardous energy was suddenly or unexpectedly released; such as the unexpected release of stored pressure, the unexpected movement of a machine, or the spray from a hazardous chemical that was unexpectedly released.

High Voltage System - Associated electrical conductors and equipment operating at or intended to operate at a sustained voltage of more than 600 volts.

Lockout - The method of applying a mechanical lockout device and a tag on an energy-isolating device by an authorized employee in accordance with established written procedures, in order to control hazardous energies.

Lockout Device - Padlocks, combination locks, or other methods (such as disconnecting conductors or removing fuses), which will effectively prevent unexpected or inadvertent energizing of a designated circuit or release of equipment or machinery. These devices shall not be used for other purposes, and shall include a means to indicate the identity of the employee applying the device.

Low Voltage System - Associated electrical conductors and equipment operating at or intended to operate at a sustained voltage of 600 volts or less.

Normal Production, Normal Production Operation - Using a machine or piece of equipment for its intended or designed production function. If a machine or piece of equipment is not actively producing its product, it is not considered to be in production.

Qualified High Voltage Electrical Worker - A person who has a minimum of two years of training and experience with high voltage circuits (> 600 volts) and equipment and who has demonstrated he/she is familiar with the work to be performed and the hazards involved. A Qualified High Voltage Electrical Worker will actually be performing the electrical work.

Tagout - The placement of a tagout device on an energy-isolating device in accordance with established written procedures to control hazardous energy. Using tagout as a form of hazardous energy control is not a positive means of controlling hazardous energy and shall not be used whenever lockout is possible.

Tagout Device - A prominent warning tag capable of being securely attached that provides a warning not to use the equipment. The tag should include: reason for tag, name of person placing the tag and how that person may be contacted, and date the tag was placed. Tags must be durable and able to withstand the environment to which they are exposed for the maximum time exposure is expected. These tags shall not be used for other purposes.

Stored Energy Source - Any device that is capable of holding energy after equipment shutdown. This includes, but is not limited to, capacitors, tanks, pipes, springs, and flywheels.

4. Responsibilities

Lockout/Tagout Coordinator Responsibilities

The assigned Lockout/Tagout Coordinator is responsible for:

- 1) Writing equipment specific lockout/tagout procedures;
- 2) Ensuring that only Authorized Lockout/Tagout Employees perform lockout/tagout operations on necessary equipment;
- 3) Maintaining an inventory of all equipment in their department that requires equipment specific lockout/tagout procedures;
- 4) Receiving the appropriate training to become an Authorized Lockout/Tagout Employee and

- perform lockout/tagout procedures on equipment;
- 5) Ensuring LOTO training is complete for all authorized and affected persons onsite to ensure they understand expectations detailed within these procedures
 - 6) Conducting periodic audits of the LOTO log and reporting to the Site Manager the results of the audit.
 - 7) Fully understanding the work to be done and authorization of the protection required to make the system/equipment safe to work on
 - 8) Ensuring compliance with the LOTO rules and regulations
 - 9) Review of the active LOTO's
 - 10) Notifying any LOTO violations to the Site Manager

5. Program Components

FlowChart

Sequence of Hazardous Energies Control Procedure (Appendix A)

1 – Authorized workers must create the work plan, written lockout procedures, and physically locate and identify all isolating devices to be sure which switches, valves, or other energy isolating devices apply to the equipment to be locked out.

2 – Authorized LOTO users desiring to lock or tag out a system on the project must report to the LOTO coordinator for the LOTO Hazardous Energy Control form. (24 hour lead time)

3 – The HEC form must be completed and approved by the LOTO coordinator.

4 – Upon approval, the LOTO coordinator will issue the necessary locks and equipment.

5 – The LOTO coordinator will accompany requesting party to item to be locked out to personally apply a Turner' lock.

6 – At the conclusion of the LOTO the LOTO coordinator will witness the actual removal of the devices and authorize a return to service of the item and the closing of the HEC form.

7 - Employees authorized to lockout/tagout equipment must be certain which switch or other energy isolating devices apply to the equipment to be locked out.

- All energy isolating devices must have labels identifying the equipment supplied and the type and magnitude of energy isolated.
- CAUTION: Any questionable identification of electrical energy sources must be cleared by the employees with their supervisor before proceeding.

8 - Notify all Affected and Other Employees as necessary that a lockout is to be performed. These persons must be informed that they are not to disturb the lockout device or attempt to re-start the equipment until they are informed that the lockout has been cleared and it is safe to resume normal operations.

9 - If the equipment is in operation, shut it down using the normal shutdown procedure. Turn the equipment off if there is an off/on switch.

10 - Open the circuit breaker, disconnect switch or other energy-isolating device (i.e., turn it to the "OFF" position). Toggle switches, push buttons, and other types of control switches

are not energy isolating devices.

11 - All energy-isolating devices must be locked out. Lockout the circuit breaker, disconnect switch, or other isolating device in the open ("OFF") position with an assigned individual lock, and attach an identifying tag to the lock. If it is impossible to use a lock, refer to the "Procedure When Physical Locking Is Impossible" section.

12 - For electrical equipment which has capacitors that must be manually discharged to assure safe work, open access panels and discharge these capacitors with an appropriate discharge tool and follow directions in the equipment manual or maintenance procedures.

13 - All forms of stored energy must then be dissipated (except for batteries which can be disconnected). This may include relaxing any springs, relieving any pressure or vacuum, allowing flywheels to come to rest, or neutralizing or adequately removing any chemicals.

14 - Any parts that could inadvertently move during the procedure must be blocked in place to prevent this movement. Blocking must be secured in place so that it cannot be inadvertently removed or fall out.

15 - At this point it must be verified that all forms of hazardous energy have been reduced to zero potential. If the work to be performed involves de-energized electrical equipment, this equipment must be tested with some form of test equipment to verify that there is no electrical energy present. Other forms of energy also require verification of zero potential. Examples of such means of verification include: observing a pressure gauge for zero pressure (gauge) or vacuum, observing a multi-meter showing zero volts, observing a spring in a relaxed state, observing that a flywheel is not spinning, or using litmus paper or a measuring device to verify that a chemical is no longer present or hazardous.

- The final step is to attempt to re-start or re-energize the equipment or machinery to verify an isolated condition. If the equipment does not re-start, then work can proceed. If the equipment re-starts or it appears that energy has been allowed to flow into the system, there could be a serious flaw in the procedure, and no work should proceed until the problem is identified and appropriate steps are included in the procedure to control this energy.
- **The equipment is now locked out. Work may now begin.**

Situations Involving More than One Person Locking Out

Contractors must engage in a group lockout situation if more than one employee works on the equipment, a lockout adaptor suitable for the installation of several locks must be used, enabling all workers to lock out the machine with their individual locks.

Procedure Involving Personnel Changes During The Job

Persons being replaced or exchanged on a job during a shift or at the end of a shift must ensure that the lock(s) and tag(s) of his/her replacement are substituted for his/her own before leaving the job.

If a lockout procedure is to continue through the following work shift, the oncoming work crews must place their locks and tags on the energy isolating devices before the departing crew removes their locks and tags. Before work begins on the subsequent work shift, the oncoming crew must re-verify that all safety devices, such as blocking, are in place, that there is still zero energy in the system, and they should attempt to restart or re-energize the system before anyone enters the hazard zone.

Procedure When Work Is Left Unfinished

Locks, tags, and all other safety warning devices must be left in place during all short absences such as breaks or trips to pick up parts.

When work is incomplete and temporarily suspended overnight or over a weekend, all locks, tags, and other safety warning devices must be left in place.

When work is suspended for more than a weekend, the equipment or machinery must be tagged as out of service, permanently disconnected from all energy sources, and must have its cover and access panels reinstalled. All locks and other tags must be removed.

Procedure When One Employee Leaves The Area Without Removing His/Her Lock

When an employee leaves the facility site and does not remove his/her lock(s) from the energy isolating device(s) (for example, if the employee became sick and left the site) then the responsible supervisor must attempt to contact that employee to determine if he/she will be able to return to remove the lock. If it is verified that the equipment is ready to be returned to service, and the employee is unavailable or cannot return, the supervisor must complete the Abandoned Lock Removal Authorization Form (Appendix B), then cut the lock(s) off the energy isolating device(s).

Once the employee returns to the work site, that person must be informed that their lock was removed and the status of the equipment that was locked out (e.g., returned to service, still under lockout, etc.).

Procedure When Physical Locking Is Impossible

When it is impossible to use a lock, a tagout device must be used in lieu of a lockout along with another positive means of disconnecting the circuit, equipment, or machinery. This can include unplugging the equipment (or locking out the plug), disconnecting the conductors, or removing fuses.

All other steps of the process are the same as those listed above for lockout. A tagout device must be placed on the plug, conductors, disconnect switch, fuse brackets, or other positive means employed.

Procedure When Machine Testing Is Required During a Lockout

On some machines, it may be necessary to energize or start up machinery or equipment during a lockout procedure to tune, adjust, or make measurements before the machine is fully restored to service. In those instances, all persons must clear the hazard zone of all tools and equipment, leave the hazard zone, verify that all persons are clear of any hazards, remove the necessary locks, and then the equipment can be energized. A qualified person must then make the necessary measurements or adjustments and the equipment shut down. The locked-out condition must then be re-established by repeating the exact same work steps specified on the written procedure for fully locking out the equipment.

Lock Out Requirements for Specific Situations

Work on pressure or vacuum systems:

- For pneumatic systems, (e.g., generally where compressed air is used to perform some mechanical function).
- Pneumatic systems are generally used to provide some force for mechanical movement.

For isolating such a system, it may be more logical and convenient to isolate (block) and lockout the mechanical portion of the energy path. If servicing or maintenance is to be performed on the pneumatic system itself, the compressor pump must be turned off and locked out and the air receiver or system depressurized before work can begin.

Work on Electrical Power Systems or Equipment:

Work on de-energized electrical equipment or systems must be accomplished by person(s) who are Authorized Lockout/Tagout Employees. Electrical energy must be locked out at a disconnect switch that positively interrupts the circuit supplying the electricity or the equipment is physically disconnected from the source of electricity. Interlocks, software controls, relays, or other control circuit devices are prohibited for use to control hazardous electrical energy for servicing or maintenance. The equipment or circuits must be verified to be de-energized with a test meter or other type of testing device before work is to begin.

Restoring Equipment to Service:

The restoration procedure is specified in the written lockout procedure below, and must be performed in the exact sequence as stated.

- 1 - Remove all blocking and replace any critical parts removed during the lockout procedure.
- 2 - Ensure that all tools or equipment have been removed from the hazard zone.
- 3 - Close and secure all cover panels and doors. If all panels or doors cannot be closed, which may occur when testing, place barricades or rope-off a safety zone with non-conductive material and post prominent warning signs around the area.
- 4 - Advise all Affected and Other Employees that the system is to be re-energized.
- 5 - Ensure all persons are clear of the equipment/hazard zone.
- 6 - Remove locks and tags. NOTE: Ordinarily, only the person who placed the locks and tags may remove them. If the person who placed the locks and tags is not available, only his/her supervisor may cut off the locks and tags, after personally ascertaining it is safe to do so.
- 7 - Energize the equipment and restore the equipment to the normal condition.
- 8 - Notify all Affected and Other Employees that the lockout condition has been cleared.

Enforcement

The Turner Lockout/Tagout coordinator is ultimately responsible for a LOTO function. Supervisors and managers of Authorized Lockout/Tagout Employees shall periodically audit their employees on the job to ensure compliance with lockout procedures.

Employees who fail to adhere to lockout and tagout procedures are subject to disciplinary action.

Any observed deviations from the written lockout procedure or inadequacies in the employee's required knowledge or understanding of their responsibility under the procedure will be reported. Refresher training must be conducted to correct these deficiencies.

No employee shall install, service, remove, or perform electrical or mechanical maintenance on any electrical equipment or machinery unless he/she is trained, and "Authorized" for the specific tasks to be performed, which shall include the specific lockout procedures necessary for that task.

6. Appendices

- A – Hazardous Energy Control Procedures Form,
- B – Abandoned Lock Removal Authorization Form,
- C – EID Form,
- LOTO Permit Log.

Turner use only

Date _____ in
Date _____ out
Contractor _____

Turner – Hazardous Energies Control and Lockout/Tagout

Appendix A: Hazardous Energies Control Procedure Form

Turner Hazardous Energies Control Procedure

NOTE: This procedure must be strictly followed to ensure protection of all persons involved.

Equipment ID: Mfg., Model #, ID #:			
Equipment Location(s):		Date Performed:	
Task to be Performed:			

Energy Forms: (check all that apply)

1. Electrical

a. Voltage – Potential is > 30V RMS or DC but < 600V

List: _____

2. Chemical – Explosion, pressure, extreme heat, fire, corrosive, reactive, oxidizer, toxic

List: _____

3. Pressure - > 1 atm, pneumatic, hydraulic, liquid

List: _____

4. Vacuum - < 1 atm

5. Mechanical/Kinetic – capable of crushing, pinching, cutting, snagging, striking

List: _____

6. Thermal – High or Low Temperature - > 60° C or < 0° C surface temperature, hot liquids, steam, cryogens

List: _____

7. Ionizing Radiation - > 2mRem/hr

8. Non-Ionizing Radiation

a. Ultraviolet - > ACGIH TLV,

b. Infrared - > ACGIH TLV,

c. RF/Microwave - > ACGIH TLV,

d. Laser – Class II, Class III, Class IV,

e. Magnetic Fields - > ACGIH TLV.

9. Potential – Flywheels, springs, differences in elevation, elevated parts that could drop, capacitors, batteries

Note on SHIFT CHANGES: If this procedure lasts more than one work shift, the oncoming persons will apply their locks and tags before the departing shift removes their locks and tags.

Turner – Hazardous Energies Control and Lockout/Tagout

Lockout Procedure

Follow the procedure below exactly as listed – check off each time as each step is completed:

1. Notify all Affected and Other Employees of intended lockout.
2. Turn off or shutdown and lockout and tag each energy control point listed below.

Turner – Hazardous Energies Control and Lockout/Tagout

Specific Lockout Locations

3. Dissipate any stored energy as described below.

Dissipate These Energy Sources

4. Block any mechanical parts, and remove any mechanical links listed below. Lock blocking in place. (Note: Two physical blocks in the line required with the space in between depressurized and emptied to break any secure any hazardous gas/liquid line.)

Block These Parts/Remove Linkages

5. Verify all persons clear of Hazard Zone
6. Attempt to re-start machinery or re-energize equipment.
7. Verify no hazardous energy remains by the methods listed below. Use circuit tester/meter if electricity is involved.

Turner – Hazardous Energies Control and Lockout/Tagout

Verify No Residual Energy by These Methods

8. Perform required work

Procedure to Return Equipment to Operation

9. Verify Hazard Zone is clear of equipment, workers, tools, and test equipment.

10. Unlock and remove any blocking devices; replace linkages.

11. Reposition any safety valve(s) left open to prevent re-buildup of pressure.

12. Remove all locks and tags from energy control points.

13. Re-start or re-energize the equipment.

14. Notify all Affected and Other Employees that the lockout has been cleared.

Names of Authorized Lockout/Tagout Employee(s) performing this lockout (Turner Lockout/Tagout Supervisor)	
Names of Affected Employees affected by this Lockout procedure	

Appendix B: Abandoned Lock Removal Authorization Form

Note: Only supervisors can remove abandoned locks.

Name of person whose lock must be removed: _____

Has an attempt been made to contact him/her? ☐ YES ☐ NO

Why is it critical to remove this lock now?

Are you sure it is safe to remove this lock? ☐ YES ☐ NO

Supervisor's name: _____

Signature: _____

Date: _____

EH&S Representative: _____

Signature: _____

Date: _____

LOTO General Procedures

Turner will maintain control and custody of the LOTO program. All lock outs and lock out releases will be the responsibility of Turner's LOTO coordinator.

- There will be clipboards hanging on the wall in the office. On these clipboards all forms pertinent to LOTO activity will be placed until lock removal and closure of LOTO permit.
- If an item is to be locked out, the requesting contractor will submit a Hazardous Energies Control (HEC) form. This form can be obtained from the LOTO coordinator.
- The subcontractor will provide a knowledgeable, qualified individual to both verbally and in writing have the ability to explain in detail any complex system to be locked out.
- Turner will likewise provide a knowledgeable and qualified person to verify the LOTO request and for final authorization and act as the Turner LOTO Coordinator.
- The subcontractor will assist the LOTO coordinator in understanding the complex system for ultimate lockout control.
- Turner and the subcontractor qualified person will determine if any special PPE will be required or owner (corporate communications) needed.
- The LOTO coordinator along with the subcontractor will issue the locks and appropriate hardware and accompany the subcontractor to the items to be locked out. The subcontractor will place the first set of locks on. The Turners LOTO coordinator will place a Turners lock on last. If there are multiple trades affected by the energization/deenergization of a system, their locks are also placed on the system in series as dictated by the LOTO coordinator. The Turner lock will always be the last and controlling lock on the system.
- Once the HEC form has been opened, the form will be displayed on one of the hanging clipboards. Under each clip will be displayed in bold letters who the responsible subcontractor is along with the opening date of the HEC form.
- When the system is to be returned to service, the subcontractor will return to the LOTO office and make the request. The LOTO coordinator will then assemble all of the stake holders for the locked out system and seek the approval from each of them for lock removal per the HEC lock removal procedure.
- All closed out HEC forms will be filed by contractor in the office.

Appendix F: Toxic Metals Lead/Heavy Metal Program

Policy Statement

Turner does not want to be in the business of performing contaminated or hazardous remediation work. It is critical that Turner Business Units take all steps possible to insulate Turner from taking the risk of the Owner's hazardous materials.

Normally it is the owner's responsibility to arrange for the remediation of any contaminated or hazardous materials, whether found before the project is bid and awarded, or if discovered during construction. Turner requires that the Owner provide assurances via a Clean Letter from a certified/licensed Remediation Contractor that a project site is either free from environmental hazards before work begins or that the environmental hazard identified during an ongoing project has been successfully remediated.

If Turner anticipates they may become contractually obligated to perform contaminated or hazardous remediation, or that the Owner will sign an Agreement of Convenience as described herein, the procedures described below will be followed.

At no time will Turner self-perform any remediation. Details involving our response to hazardous materials under different scenarios are provided with in Turner Construction Environmental Operation Policy.

Should the Business Unit suspect that an environmental hazard exists on a project site or in areas of the building as a result of the Phase I being performed, or from jobsite visits, etc.; the Business Unit should suggest that the Owner perform a Phase II inspection that is completed by a qualified (certified or licensed according to state and local regulations) environmental consultant. The BU Safety Director should be involved in the review of the Phase II Environmental Assessment.

Establishing a Project Specific Written Toxic Metals Lead/Heavy Metal Program

Toxic metals, including "heavy metals," are individual metals and metal compounds that negatively affect people's health. Some toxic metals, semi-metallic elements, including arsenic, beryllium, Cadmium, Hexavalent Chromium, Lead, Mercury, and selenium are extremely dangerous even at small exposures. In very small amounts, many of these metals are necessary to support life. However, in larger amounts, they become toxic. They may build up in biological systems and become a significant health hazard. This page provides a starting point for technical and regulatory information about toxic metals. Other Metals to be aware of include, aluminum, antimony, cobalt, copper, iron, manganese, nickel, selenium, molybdenum, silver, zinc, vanadium and tin.

- Arsenic occurs naturally in the environment as an element of the earth's crust. Arsenic is combined with other elements such as oxygen, chlorine, and sulfur to form inorganic arsenic compounds. Exposure to higher-than-average levels of arsenic occurs mainly in workplaces, near or in hazardous waste sites, and areas with high levels naturally occurring in soil, rocks, and water. Exposure to high levels of arsenic can cause death. Exposure to arsenic at low levels for extended periods of time can cause a discoloration of the skin and the appearance of small corns or warts. Exposures to Arsenic are addressed in specific standards for construction standards.

- Beryllium, atomic number 4, is a brittle, steel-gray metal found as a component of coal, oil, certain rock minerals, volcanic dust, and soil. Elemental beryllium is the second lightest of all metals and is used in a wide variety of applications. In its elemental form beryllium exhibits the unique properties of being light weight and extremely stiff, giving the metal several applications in the aerospace, nuclear, and manufacturing industries. In addition, beryllium is amazingly versatile as a metal alloy where it is used in dental appliances, golf clubs, non-sparking tools, wheel chairs, and electronic devices. Exposures to beryllium are addressed in specific standards for general industry.
- Cadmium (Cd) is a soft, malleable, bluish white metal found in zinc ores. Common industrial uses for cadmium today are in batteries, alloys, coatings (electroplating), solar cells, plastic stabilizers, and pigments. Cadmium is also used in nuclear reactors where it acts as a neutron absorber. Cadmium and its compounds are highly toxic and exposure to this metal is known to cause cancer and targets the body's cardiovascular, renal, gastrointestinal, neurological, reproductive, and respiratory systems. Requirements to protect workers from cadmium exposure are addressed in specific OSHA cadmium standards covering general industry (1910.1027), shipyards (1915.1027), construction (1926.1127) and agriculture (1928.1027).
- Hexavalent chromium [Cr(VI)] is one of the valence states (+6) of the element chromium. It is usually produced by an industrial process. Cr(VI) is known to cause cancer. In addition, it targets the respiratory system, kidneys, liver, skin and eyes. Chromium metal is added to alloy steel to increase hardenability and corrosion resistance. A major source of worker exposure to Cr(VI) occurs during "hot work" such as welding on stainless steel and other alloy steels containing chromium metal. Cr(VI) compounds may be used as pigments in dyes, paints, inks, and plastics. It also may be used as an anticorrosive agent added to paints, primers, and other surface coatings. The Cr(VI) compound chromic acid is used to electroplate chromium onto metal parts to provide a decorative or protective coating. Requirements to protect workers from Cr(VI) exposure are addressed in specific OSHA hexavalent chromium standards covering general industry (1910.1026), shipyards (1915.1026), and construction (1926.1126).
- Requirements to protect workers from Cr(VI) exposure are addressed in specific OSHA hexavalent chromium standards covering general industry (1910.1026), shipyards (1915.1026), and construction (1926.1126).
- Lead overexposure is one of the most common overexposures found in industry and is a leading cause of workplace illness. It is also a major potential public health risk. In general populations, lead may be present in hazardous concentrations in food, water, and air. Sources include paint, urban dust. Lead hazards are addressed in specific standards for general industry, shipyard employment and the construction industry.
- Mercury is naturally occurring and exists in several forms. High mercury exposure results in permanent nervous system and kidney damage. Exposure is most likely to occur during mining, production, and transportation of mercury, as well as mining and refining of gold and silver ores. Mercury is commonly found in thermometers, manometers, barometers, gauges, valves, switches, batteries, and high-intensity discharge (HID) lamps. It is also used in amalgams for dentistry, preservatives, heat transfer technology, pigments, catalysts, and lubricating oils. Mercury hazards are addressed in specific standards for the general industry, shipyard employment, and the construction industry.

Establish and implement a job specific written protection program:

- a. A description of each activity in which exposure to lead/heavy metals is expected; e.g. equipment used, material involved, controls in place, crew size, team member job responsibilities, operating procedures maintenance and a competent person. The job specific written plan is to be developed and reviewed periodically by a qualified person.
- b. Each activity involving lead or other heavy metals requires a competent person to be onsite. Regular and frequent inspections by the competent person. A competent person by definition has the knowledge to identify hazards associated with the work, has the knowledge to correct those hazards, **and has the authority to take the necessary corrective actions**. If the person does not have the authority to make changes, then that person cannot be the competent person. A back up shall be identified when the competent person is not present at the site.
- c. A description of the specific means that will be employed to achieve compliance and, where engineering and work practice controls are required to reduce exposure levels below the PEL, document plans and studies used to determine methods selected for controlling exposure to toxic or heavy metals. Eliminating the hazard by engineer control is the first choice of control.
- d. A description of the technology considered in attempting to reduce the exposure levels below the PEL when feasible (ventilation, filtering, respirators, containment). Document the reasons why some controls available are not feasible or possible to do.
- e. Monitoring data that documents the source of lead/heavy metals emissions.
- f. Provide to Turner Construction when requested Pre-work and Post work medical screening and surveillance documentation to include respiratory fit testing, exposure levels and other required documentation for each employee.
- g. A detailed schedule for implementation of the program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.
- h. A work practice program that includes protective work clothing and equipment, housekeeping and hygiene facilities/practices and incorporates other relevant team member work practices.
- i. Provide, when feasible and allowed, administrative controls, schedule for team members minimizing the time spent working in lead/heavy metals area.
- j. Hazard and solution identification documented in the activity plan(s) and conveyed to all team members working in the lead/heavy metals control area(s).

- k. Method of informing other contractors and subcontractors of potential heavy metals exposure if applicable.
- l. Method of controlling/securing work area from any accidental exposures.

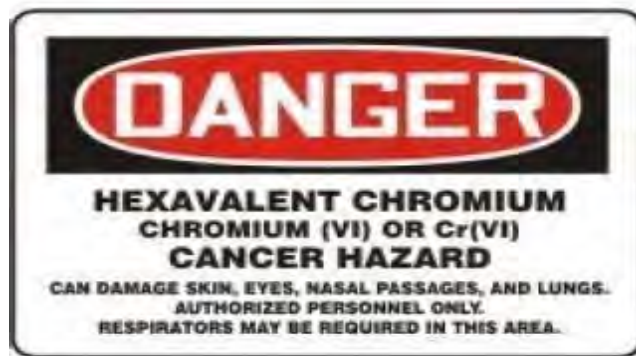
Training:

Before any activity involving potential lead contamination and exposure begins, subcontractors are responsible to conduct job-specific training for their team members in the following areas:

1. Review Job Hazard Analysis and other project required plans in regards to lead exposure/handling and hazards/solutions.
2. Specific activities that could result in exposure to lead and exposure levels (if known) for the work activities.
3. Health hazards associated with lead exposure.
4. Proper use, wear, care, and maintenance of protective clothing and equipment including respirators.
5. Engineering/administrative work practice controls needed to minimize hazards.
6. Purpose of medical surveillance and team member rights concerning this information. Include medical removal provisions and their rights.
7. Discuss requirements concerning warning signs for work areas.
8. Review content and appendices of OSHA Occupational Safety and Health Standards, (section 1926.62 Lead, 1926.1118 for Arsenic, 1926.1127 for Cadmium, and 1926.1126 for hexavalent chromium). See BU safety manager for other metals. Note: See also OSHA approved State plans have additional requirements for metal exposure.
9. Proper handling of contaminated materials and waste.
10. No chelating agents to be used except under direction of a licensed physician.
11. Team member rights to access exposure and medical records (CFR 1910.20).
 - a. Explain existence and location of records.
 - b. Person responsible to maintain and provide access to records.

Eliminating / Minimizing Exposure:

1. The first step in lead or other heavy metal activity planning is determining whether the hazard can be eliminated.
2. If a hazard cannot be **eliminated**, the next step is to minimize it. This can be done through engineering, administrative and work practice controls such as utilizing a product without the metal component, work isolation, job rotation, and mechanical ventilation.
3. REMEMBER, if the hazard cannot **eliminated** and the levels exceed the Permissible Exposure Limit (PEL) and or American Conference of Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) for the metal (50 ug/m3 for lead), the lead work area must be clearly marked and posted with signs. Use appropriate language for other metals if air monitoring shows levels at or above the PEL. **You also need signs for arsenic or cadmium work areas if they are present above the PEL.**



Exposure Assessment and Air Monitoring:

1. Subcontractors working with lead or other heavy metal containing materials must plan and develop safeguards to protect against exposures resulting from outside elements (wind, temperature) and work location (indoors, outdoors, over water, over workers, near public areas, etc.). Plans to include containment must be project-specific and meet the most current Federal, State, local, client and Turner Construction requirements.
2. Each work activity must be monitored to determine the levels of team member lead/heavy metals dust/fume exposure and the effectiveness of engineering controls, work practice controls, PPE, etc. Air monitoring must be done during regular daily duties by a qualified person. Exposures should be evaluated with standard total dust/fume/mist sampling techniques for comparison to the OSHA permissible exposure limits (PEL). Initial air sampling should be taken as soon as possible with the start of an activity (within 24 hours, if possible) and the results received from the lab as airborne lead level results and the specific work activity by a qualified person. Compare results to the PEL. (Remember to adjust action limit and PEL if working other than 8-hr shifts.)
3. Continue air monitoring until consecutive tests are obtained below the action level. A historical sampling result may be used as one of the two tests at least 7 days apart if the following conditions are met: acceptable historical monitoring results are current within the last 12 months and taken where workplace conditions closely resemble the current work (essentially the same types of materials, tools engineering and work practices, and environmental conditions).
4. In performing air monitoring (personal air sampling), documentation needs to be specific/detailed as to actual work activity tasks, time exposed to lead or non-lead work for the full shift, etc.
5. Any changes in the work activities or conditions that could possibly result in increased exposure require immediate further air monitoring.
6. Air monitoring needs to be done to represent each group of people who have similar exposures (for each task, location, work method, etc.).
7. Environmental Air Monitoring
 - Perform Total Suspended Particulate (TSP) monitoring when appropriate. (Usually on large outside jobs or jobs that vent outside.)
 - Perform air monitoring during lead or other heavy metal work.
 - Utilize a professional Industrial Hygienist Consulting Firm to perform this monitoring.
 - Document the sampling

Personal Protective Equipment:

After engineering and work practice controls are in place to minimize the lead or other heavy metal contamination hazard, protective clothing must be utilized. The Safety Data Sheets and manufactures' requirements for the metal are to be reviewed for standard PPE requirements. At a minimum, this shall include gloves, coveralls or tyvek suits, boots, and hard hats. Clean protective coveralls or tyvek suits must be provided daily, if the airborne lead level exceeds PEL or TLV. However, tyvek suits must be repaired or replaced immediately if ripped or torn. Respiratory protection should be determined by subcontractor's qualified competent person and/or IH Consultant.

Hygiene Practices and Controls:

Lead and other heavy metal exposure occurs through ingestion and inhalation (and also skin contact for hexavalent chromium). This usually results from ingesting lead or other heavy metal particles that come in contact with food, coffee, and cigarettes, etc. Good hygiene practices are extremely important no matter which type of lead activity is performed. To avoid contamination, the following hygiene practices will be used on all projects with lead or other heavy metal activity:

1. Running water (heated if possible), soap (pumpable preferred since it prevents contamination of soap), clean towels, and readily available trash container to ensure team members wash their hands and face prior to eating, drinking, smoking, and leaving the project. Showers are also required, where feasible, when the airborne lead is above 50 ug/m³ (PEL) for an 8 hours (TWA) shift; 40 ug/m³ for a 10 hour (TWA) shift; 33.3 ug/m³ for a 12 hour (TWA) shift.
2. Clean change room/area for removing necessary street clothes and putting on protective clothing. Instructional signs should be posted in change and wash areas to ensure proper steps are taken to prevent exposures. Separate change room/area, including closed disposal container, for team members to remove contaminated clothing. Contamination must not spread to street clothes, team member homes and children.
3. Establish check point(s) at access/egress point(s) to lead work area(s). Assign an individual at this check point(s) to monitor team member hygiene practices exiting work area(s).
4. All dirty coveralls must be placed into a separate container. This container must be marked:
CAUTION: "Clothing contaminated with lead (or hexavalent chromium if appropriate). Do not remove dust by blowing or shaking. Dispose of lead contaminated wash water in accordance with local state and federal regulations."
5. Laundry cleaning service must be notified in writing that clothing is contaminated with lead or hexavalent chromium.
6. Provide clean lunch/break room, separate from change area. Team members must HEPA vacuum themselves off at a checkpoint when leaving the regulated work area or

remove contaminated clothing and in either case, wash hands and face before entering a clean area.

7. Keep surfaces clean and work areas free from lead contamination, preferably cleaned with a vacuum equipped with High Efficiency Particulate Air (HEPA) filter. The clean areas (change room/area, lunch room/area, etc.) must have less than 200 ug/ft² of lead contamination (wipe test). Wipe samples should be done approximately every two weeks, more often if there is reason to believe the areas are not staying clean.
8. Equipment being removed from a lead controlled area needs to be decontaminated by vacuum or water wash. (i.e. body harness/lanyards, grinders, cords, hoses, small tools, etc.)

CAUTION: Do not use cleaning methods that introduce contaminated dust into the air (like dry sweeping, blow down, etc.).

NOTE: There will be no smoking, eating, or drinking in regulated work/change areas that contain heavy metals, only in properly designated areas. There will also be no smoking, eating, and drinking until contaminated outer clothing is removed or HEPA vacuumed and team members have washed up. Furthermore, smoking and eating/drinking materials are not allowed in the lead area. **Failure to follow these guidelines has been the leading cause of high blood-lead levels!**

Medical Surveillance:

1. Subcontractor team members who will be participating in activities constituting a potential exposure to heavy metal exposure will undergo initial medical surveillance to determine employee baseline, post work to establish exposure when required and required to perform the work activities. Consult BU safety director for federal, state client requirements.

Medical Exams

The initial medical exam, when required, is done by a physician chosen by the subcontractor. A second opinion, (see below), may be requested by the team member using a physician chosen by the subcontractor's team member.

Team members may request a medical exam if any one of the following holds true:

1. Developed signs or symptoms commonly associated with lead intoxication or other metal exposure.
2. Desires medical advice concerning the effects of current or past exposure to lead on his/her ability to have a health child. (Includes effects on pregnancy and male fertility.)
3. Has a blood lead level at or above 40 ug/dl at any time during the preceding 12 months.
4. Person is pregnant and is or has worked in a heavy metal environment within the last 12 months.
5. Has difficulty breathing with a respirator.
6. Requesting a second opinion.

Recordkeeping:

Maintain accurate records of all monitoring and other data used in conducting team member exposure assessments.

1. Preconstruction Meeting shall be held prior to start of work to review all safety concerns with all parties involving lead and/or any other heavy metal.
2. Job Hazard Analysis: Complete a Job Hazard Analysis (JHA) for all Lead work activities. Please review with BU Safety Director before the start of work. Any other heavy metal requires a site/task specific activity plan as well. Can be combined in the same plan.
3. Training records: Copies of all training rosters must be kept on file and provided to Turner Construction upon request.
4. Exposure Monitoring Records
 - a. The date(s), numbers, duration, location and results of each of the samples including a description of the sampling procedure used to determine representative team member exposure.
 - b. A description of the sampling and analytical methods used and evidence of their accuracy.
 - c. The type of respiratory protective devices worn.
 - d. The environmental variables that could affect the measurement of team member exposure.

Waste Disposal:

1. Treat all heavy metal contaminated waste as "hazardous waste".
2. Store all heavy metal contaminated waste in UN or DOT approved containers (15, 30, or 55 gal.). Ensure proper storage and handling, and daily inspections.
3. Clearly identify the **generator (should be the Client)** of the contaminated waste shipments in the project contract. Ensure that Turner Construction's name is not on any Hazardous Waste Manifest or other disposal documentation, **AND** ensure that a client representative, not a Turner team member, signs all disposal documentation/manifests.
4. Give all original paperwork to the Client representative and only keep photocopies at the jobsite. Remember, if the client is the generator; **DO NOT** keep any original paperwork!

Health Effects and SDS

HEALTH EFFECTS OF LEAD EXPOSURE

You get lead into your body by breathing it in or by swallowing it. Lead particles do not go through the skin, but if lead dust is in your hands it can be accidentally swallowed while eating, drinking, or smoking.

Lead is hazardous when it gets into the bloodstream where it can move around the body. High exposures over a short period of time or lower exposures spread out over longer time periods can cause lead poisoning. Lead can damage the brain and nervous system, kidneys, and reproductive systems. Lead also contributes to high blood pressure. Most of the absorbed lead is eventually stored in the bones where it may stay for decades. Under certain conditions, the lead stored in the bone may leach slowly into the bloodstream.

The early effects of lead poisoning are not specific and resemble the flu symptoms. Short term and long term effects of lead overexposure are listed below.

Lead poisoning is preventable. Many of the health problems caused by lead exposure are reversible if exposure is eliminated or reduced.

SHORT TERM EFFECTS

- Stomach cramps
- Poor appetite
- Irritability/anxiety
- Fatigue
- Muscle or joint pain
- Weakness
- Headache
- Numbness
- Constipation
- Sleep problems
- Impotence/loss of sex drive

LONG TERM EFFECTS

- High blood pressure
- Nerve disorders
- Brain damage
- Kidney damage
- Reproductive damage
- Birth defects

Lead

I. SUBSTANCE IDENTIFICATION

- A. "Substance": Pure lead (Pb) is a heavy metal at room temperature and pressure and is a basic chemical element. It can combine with various other substances to form numerous lead compounds.
- B. "Compounds Covered by the Standard": The word "lead" when used in this interim final standard means elemental lead, all inorganic lead compounds and a class of organic lead compounds called lead soaps. This standard does not apply to other lead compounds.
- C. "Uses": Exposure to lead occurs in several different occupations in the construction industry, including demolition or salvage of structures where lead or lead-containing materials are present; removal or encapsulation of lead-containing materials, new construction, alteration, repair, or renovation of structures that contain lead or materials containing lead; installation of products containing lead. In addition, there are construction related activities where exposure to lead may occur, including transportation, disposal, storage, or containment of lead or materials containing lead on construction sites, and maintenance operations associated with construction activities.
- D. "Permissible Exposure": The permissible exposure limit (PEL) set by the standard is 50 micrograms of lead per cubic meter of air (50 ug/m³, averaged over an 8-hour workday. The action level triggers several ancillary provisions of the standard such as exposure monitoring, medical surveillance, and training.

II. HEALTH HAZARD DATA

- A. "Ways in which lead enters your body". When absorbed into your body in certain doses, lead is a toxic substance. The object of the lead standard is to prevent absorption of harmful quantities of lead. The standard is intended to protect you not only from the immediate toxic effects of lead, but also from the serious toxic effects that may not become apparent until years of exposure have passed. Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). Lead (except for certain organic lead compounds not covered by the standard, such as tetraethyl lead) is not absorbed through your skin. When lead is scattered in the air as a dust, fume, or mist it can be inhaled and absorbed through your lungs and upper respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed. If you handle food, cigarettes, chewing tobacco, or make-up which have lead on them or handle them with hands contaminated with lead, this will contribute to ingestion. A significant portion of the lead that you inhale or ingest gets into your blood stream. Once in your blood stream, lead is circulated throughout your body and stored in various organs and whole body tissues. As exposure to lead continues, the amount stored in your body will increase if you are absorbing more lead than your body is excreting. Even though you may not be aware of any immediate symptoms of disease, this lead stored in your tissues can be slowly causing irreversible damage, first to individual cells, then to your organs and whole body systems.

- B. "Effects of overexposure to lead" – (1) "Short-term (acute) overexposure". Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from cardiorespiratory arrest. A short term dose of lead can lead to acute encephalopathy. Short term occupational exposures of this magnitude are highly unusual, but not impossible. Similar forms of encephalopathy may, however, arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead adversely affects numerous body systems, and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years. (2) "Long-term (chronic) overexposure". Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic. In lead colic there may be severe abdominal pain. Damage to the central nervous system in general and the brain (encephalopathy) in particular is one of the most severe forms of lead poisoning. The most severe, often fatal form of encephalopathy may be preceded by vomiting, a feeling of dullness progressing to drowsiness and stupor, poor memory, restlessness. Irritability, tremor, and convulsions. It may arise suddenly with the onset of seizures, followed by coma, and death. There is a tendency for muscular weakness to develop at the same time. This weakness may progress to paralysis often observed as a characteristic "wrist drop" or "foot drop" and is a manifestation of a disease to the nervous system called peripheral neuropathy. Chronic overexposure to lead also results in kidney disease with few, if any, symptoms appearing until extensive and most like permanent kidney damage has occurred. Routine laboratory tests reveal the presence of this kidney disease only after about two-thirds of kidney function is lost. When overt symptoms of urinary dysfunction arise, it is often too late to correct or prevent worsening conditions, and progression to kidney dialysis or death is possible. Chronic overexposure to lead impairs the reproductive systems of both men and women. Overexposure to lead may result in decreased sex drive, impotence and sterility in men. Lead can alter the structure of sperm cells raising the risk of birth defects. There is evidence of miscarriage and stillbirth in women whose husbands were exposed to lead or who were exposed to lead themselves. Lead exposure also may result in decreased fertility, and abnormal menstrual cycles in women. The course of pregnancy may be adversely affected by exposure to lead since lead crosses the placental barrier and poses risks to developing fetuses. Children born of parents either one of whom were exposed to excess lead levels are more likely to have birth defects, mental retardation, behavioral disorders or die during the first year of childhood. Overexposure to lead also disrupts the blood – forming system resulting in decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia. Anemia is characterized by weakness, pallor and fatigability as a result of decreased oxygen carrying capacity in the blood. (3) "Health protection goals of the standard". Prevention of adverse health effects for most workers from exposure to lead

throughout a working lifetime requires that a worker's blood lead level (BLL, also expressed as PbB) be maintained at or below forty micrograms per deciliter of whole blood (40 ug/dl). The blood lead levels of workers (both male and female workers) who intend to have children should be maintained below 30 ug/dl to minimize adverse reproductive health effects to the parents and to the developing fetus. The measurement of your blood lead level (BLL) is the most useful indicator of the amount of lead being absorbed by your body. Blood lead levels are most often (100 ml) or deciliter (dl) of blood. These three units are essentially the same. Sometimes BLLs are expressed in the form of mg percent or ug percent. This is a shorthand notation for 100g, 100 ml, or dl. (References to BLL measurements in this standard are expressed in the form of ug/dl.) BLL measurements show the amount of lead circulating in your blood stream, but do not give any information about the amount of lead stored in your various tissues. BLL measurements merely show current absorption of lead, not the effect that lead is having on your body or the effects that past lead exposure may have already caused. Past research into lead-related diseases, however, has focused heavily on associations between BLs and various diseases. As a result, your BLL is an important indicator of the likelihood that you will gradually acquire lead-related health impairment or disease. Once your blood lead level climbs above 40 ug/dl, your risk of disease increases. There is a wide variability of individual response to lead, thus it is difficult to say that a particular BLL in a given person will cause a particular effect. Studies have associated fatal encephalopathy with BLLs as low as 150 ug/dl. Other studies have shown other forms of disease in some workers with BLLs well below 80 ug/dl. Your BLL is a crucial indicator of the risks to your health, but one other factor is also extremely important. This factor is the length of time you have had elevated BLLs. The longer you have an elevated BLL, the greater the risk that large quantities of lead are being gradually stored in your organs and tissues (body burden). The greater your overall body burden, the greater the chances of substantial permanent damage. The best way to prevent all forms of lead-related impairments and diseases—both short term and long term – is to maintain your BLL below 40 ug/dl. The provisions of the standard are designed with this end in mind. Your employer has prime responsibility to assure that the provisions of the standard are complied with both by the company and by individual workers. You, as a worker, however, also have responsibility to assist your employer in complying with the standard. You can play a key role in protecting your own health by learning about the lead hazards and their control, learning what the standard requires, following the standard where it governs your own actions, and seeing that your employer complies with provisions governing his or her actions. (4) "Reporting signs and symptoms of health problems". You should immediately notify your employer if you develop signs or symptoms associated with lead poisoning or if you desire medical advice concerning the effects of current or past exposure to lead or your ability to have a healthy child. You should also notify your employer if you have difficulty breathing during a respirator fit test or while wearing a respirator. In each of these cases, your employer must make available to you appropriate medical examinations or consultations. These must be provided at no cost to you and at a reasonable time and place. The standard contains a procedure whereby you can obtain a second opinion by a physician of your choice if your employer selected the initial physician.

Cadmium

I. Substance Identification

- A. Substance Cadmium,
- B. 8-Hour, Time-weighted-average, Permissible Exposure Limit (TWA PEL):
 - 1. TWA PEL: Five micrograms of cadmium per cubic meter of air ug/m(3), time – weighted average (TWA) for an 8-hour workday.
- C. Appearance: Cadmium metal-soft, blue-white, malleable, lustrous metal or grayish-white powder. Some cadmium compounds may also appear as a brown, yellow, or red powdery substance.

II. Health Hazard Data

- A. Routes of Exposure. Cadmium can cause local skin or eye irritation. Cadmium can affect your health if you inhale it or if you swallow it.
- B. Effects of Overexposure.
 - 1. Short-term (acute) exposure: Cadmium can cause local skin or eye irritation. Cadmium is much more dangerous by inhalation than by ingestion. High exposures to cadmium that may be immediately dangerous to life or health occur in jobs where workers handle large quantities of cadmium dust or fume; heat cadmium-containing compounds or cadmium-coated surfaces, weld with cadmium solders or cut cadmium-containing materials such as bolts.
 - 2. Severe exposure may occur before symptoms appear. Early symptoms may include mild irritation of the upper respiratory tract, a sensation of constriction of the throat, a metallic taste and/or a cough. A period of 1-10 hours may precede the onset of rapidly progressing shortness of breath, chest pain, and flu-like symptoms with weakness, fever, headache, chills, sweating and muscular pain. Acute pulmonary edema usually develops within 24 hours and reaches a maximum by three days. If death from asphyxia does not occur, symptoms may resolve within a week.
 - 3. Long-term (chronic) exposure. Repeated or long-term exposure to cadmium, even at relatively low concentrations, may result in kidney damage and an increased risk of cancer of the lung and of the prostate.
- C. Emergency First Aid Procedures
 - 1. Eye exposure: Direct contact may cause redness or pain. Wash eyes immediately with large amounts of water, lifting the upper and lower eyelids. Get medical attention immediately.
 - 2. Skin exposure: Direct contact may result in irritation. Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water. Get medical attention immediately.
 - 3. Ingestion: Ingestion may result in vomiting, abdominal pain, nausea, diarrhea, headache and sore throat. Treatment for symptoms must be administered by medical personnel. Under no circumstances should the employer allow any person whom he retains, employs, supervises or controls to engage in therapeutic chelation. Such treatment is likely to translocate cadmium from pulmonary or other tissue to renal tissue. Get medical attention immediately.
 - 4. Inhalation; If large amounts of cadmium are inhaled, the exposed person must be moved to fresh air at once. If breathing has stopped, perform cardiopulmonary

resuscitation. Administer oxygen if available. Keep the affected person warm and at rest. Get medical attention immediately.

5. Rescue: Move the affected person from the hazardous exposure. If the exposed person has been overcome, attempt rescue only after notifying at least one other person of the emergency and putting into effect established emergency procedures. Do not become a casualty yourself. Understand your emergency rescue procedures and know the location of the emergency equipment before the need arises.

III. Team member information

A. Protective Clothing and Equipment.

1. Respirators: You may be required to wear a respirator for non-routine activities; in emergencies; while your employer is in the process of reducing cadmium exposures through engineering controls; and where engineering controls are not feasible. If respirators are worn in the future, they must have a joint Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH) label of approval. Cadmium does not have a detectable odor except at levels well above the permissible exposure limits. If you can smell cadmium while wearing a respirator, proceed immediately to fresh air. If you experience difficulty breathing while wearing a respirator, tell your employer.
2. Protective Clothing: You may be required to wear impermeable clothing, gloves, foot gear, a face shield, or other appropriate protective clothing to prevent skin contact with cadmium. Where protective clothing is required, your employer must provide clean garments to you as necessary to assure that the clothing protects you adequately. The employer must replace or repair protective clothing that has become torn or otherwise damaged.
3. Eye Protection: You may be required to wear splash-proof or dust resistant goggles to prevent eye contact with cadmium.

B. Employer Requirements.

1. Medical: If you are exposed to cadmium at or above the action level, your employer is required to provide a medical examination, laboratory tests and a medical history according to the medical surveillance provisions under paragraph (1) of this standard. These tests shall be provided without cost to you. In addition, if you are accidentally exposed to cadmium under conditions known or suspected to constitute toxic exposure to cadmium, your employer is required to make special tests available to you.
2. Access to Records: All medical records are kept strictly confidential. You or your representative is entitled to see the records of measurements of your exposure to cadmium. Your medical examination records can be furnished to your personal physician or designated representative upon request by you or your employer.
3. Observation of Monitoring: Your employer is required to perform measurements that are representative of your exposure to cadmium and you or your designated representative is entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure, and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you or your representative must also be provided with, and must wear the protective clothing and equipment.

C. Team member Requirements: You will not be able to smoke, eat, drink, chew gum or tobacco, or apply cosmetics while working with cadmium in regulated areas. You will also not be able to carry or store tobacco products, gum, food, drinks or cosmetics in regulated areas

because these products easily become contaminated with cadmium from the workplace and can therefore create another source of unnecessary cadmium exposure.

Some workers will have to change out of work clothes and shower at the end of the day, as part of their workday, in order to wash cadmium from skin and hair. Hand washing and cadmium-free eating facilities shall be provided by the employer and proper hygiene should always be performed before eating. It is also recommended that you do not smoke or use tobacco products, because among other things, they naturally contain cadmium. For further information, read the labeling on such products.

Inorganic Arsenic

I. SUBSTANCE IDENTIFICATION

- A. Substance, Inorganic Arsenic.
- B. Definition. Copper acetoarsenite, arsenic and all inorganic compounds containing arsenic except arsine, measured as arsenic (As).
- C. Permissible exposure Limit. 10 micrograms per cubic meter of air as determined as an average over an 8-hour period. No team member may be exposed to any skin or eye contact with arsenic trichloride or to skin or eye contact likely to cause skin or eye irritation.
- D. Regulated Areas. Only team members authorized by your employer should enter a regulated area.

II. HEALTH HAZARD DATA

- A. Comments. The health hazard of inorganic arsenic is high.
- B. Ways in which the chemical affects your body. Exposure to airborne concentration of inorganic arsenic may cause lung cancer, and can be a skin irritant. Inorganic arsenic may also affect your body if swallowed. One compound in particular, arsenic trichloride, is especially dangerous because it can be absorbed readily through the skin. Because inorganic arsenic is a poison, you should wash your hands thoroughly prior to eating or smoking.

III. PROTECTIVE CLOTHING AND EQUIPMENT

- A. Respirators. Respirators will be provided by your employer at no cost to you for routine use if your employer is in the process of implementing engineering and work practice controls or where engineering work practice controls are not feasible or insufficient. You must wear respirators for non-routine activities or in permissible exposure limit. Since how well your respirator fits your face is very important, your employer is required to conduct fit tests to make sure the respirator seals properly when you wear it. These tests are simple and rapid and will be explained to you during training sessions.
- B. Protective clothing. If you work in a regulated area, your employer is required to provide at no cost to you and you must wear, appropriate, clean, protective clothing and equipment. The purpose of this equipment is to prevent you from bringing to your home arsenic-contaminated dust and to protect your body from repeated skin contact with inorganic arsenic likely to cause skin irritation. This clothing should include such items as coveralls or similar full-body clothing, gloves, shoes, or coverlets, and aprons. Protective equipment should include face shields or vented goggles, where eye irritation may occur.

IV. HYGIENE FACILITIES AND PRACTICES

You must not eat, drink, smoke, chew gum or tobacco, or apply cosmetics in the regulated area, except that drinking water is permitted. If you work in a regulated area your employer is required to provide lunchrooms and other areas for these purposes.

If you work in a regulated area, your employer is required to provide showers, washing facilities, and change rooms. You must wash your face and hands before eating and must shower at the end of the work shift. Do not take used protective clothing out of change rooms without your employer's permission. Your employer is required to provide for laundering or cleaning of your protective clothing.

V. SIGNS AND LABELS

Your employer is required to post warning signs and labels for your protection. Signs must be posted in regulated areas. The signs must warn that cancer hazard is present, that only authorized team members may enter the area, and that no smoking or eating is allowed, and that respirators must be worn.

VI. MEDICAL EXAMINATION

If your exposure to arsenic is over the action Level (5mg/m³--(including all person working in regulated areas) at least 30 days per year, or your have been exposed to arsenic for more than 10 years over the Action Level, your employer is required to provide you with a medical examination. The examination shall be every 6 months for team members over 45 years old or with more than 10 years exposure over the Action Level and annually for other covered team members. The medical examination must include a medical history; a chest x-ray; skin examination and a nasal examination. The examining physician will provide a written opinion to your employer containing the results of the medical exams. You should also receive a copy of this opinion. The physician must not tell your employer any conditions he detects unrelated to occupational exposure to arsenic but must tell you those conditions.

VII. OBSERVATION OF MONITORING

Your employer is required to monitor your exposure to arsenic and you or your representatives are entitled to observe the monitoring procedure. You are entitled to receive an explanation of the measurement procedure, and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you must also be provided with and must wear the protective clothing and equipment.

VIII. ACCESS TO RECORDS

You or your representative is entitled to records of your exposure to inorganic arsenic and your medical examination records if you request your employer to provide them.

IX. TRAINING AND NOTIFICATION

Additional information on all of these items plus training as to hazards of exposure to inorganic arsenic and the engineering and work practice controls associated with your job will also be provided by your employer. If you are exposed over the permissible exposure limit, your employer must inform you of that fact and the actions he is taking to reduce your exposures.

Hexavalent Chromium

NIOSH

Hexavalent chromium (Cr(VI)) compounds are a large group of chemicals with varying chemical properties, uses, and workplace exposures. Their properties include corrosion-resistance, durability, and hardness. Workers may be exposed to airborne Cr(VI) when these compounds are manufactured from other forms of chromium (e.g., the production of chromates from chromite ore); when products containing Cr(VI) are used to manufacture other products (e.g., chromate-containing paints, electroplating); or when products containing other forms of chromium are used in processes that result in the formation of Cr(VI) as a by-product (e.g., welding).

NIOSH considers all Cr(VI) compounds to be occupational carcinogens. Cr(VI) is a well-established carcinogen associated with lung, nasal, and sinus cancer. Some of the industries in which the largest numbers of workers are exposed to high concentrations of airborne Cr(VI) compounds include electroplating, welding, and chromate painting. A hierarchy of controls, including elimination, substitution, engineering controls, administrative controls, and the use of personal protective equipment, should be followed to control workplace exposures. Dermal exposure to Cr(VI) should also be prevented to reduce the risk of skin irritation, corrosion, ulcers, sensitization, and allergic contact dermatitis.

Table of Permissible Exposure Limits and Action Levels

	Permissible Exposure Limit (ug/m3)	Action Level (ug/m3)	TLV ug/m3)
Arsenic	10	5	10
Barium	500		500
Cadmium	5	2.5	10 2 (respirable fraction)
Chromium: Metal, II, III	1000 (metal) 500 (II or III)		500 500
Chromium IV (Hexavalent)	5.0	2.5	10 (insoluble compounds)
Lead	50	30	50
Mercury (metal and compounds excluding organo compounds)	C 100 (ceiling limit)		25 (elemental and inorganic forms)
Selenium	200		
Silver	10		
Vanadium (as Peroxide): Dust Fume	C 500 (ceiling limit) C 100 (ceiling limit)		50 50

Appendix G: INFECTION CONTROL PROGRAM

DURING HOSPITAL RENOVATION AND CONSTRUCTION

I. PURPOSE

To provide a policy designed to maintain a level of safety that will facilitate a successful construction project as well as reduce chances of airborne infections to construction workers, patients or visitors.

II. POLICY

It is the policy and intent of Turner Construction in harmony with the Healthcare Facility Management Team to contain airborne contaminants related to renovation and construction, such as dust, airborne fungus, vapors, odors, and to identify precautions and preventative measures necessary to do so.

If the Healthcare Facility has an existing infection control program, Turner Construction shall integrate its program with the Facility's. However, if the Facility does not have an infection control program, Turner Construction shall implement this program.

III. RESPONSIBILITY

The coordination of the program will be joint responsibilities of Turner Construction, the subcontractors and the Healthcare Facility Management Team. They shall coordinate all work with the Healthcare Facility Construction Manager.

IV. PRECONSTRUCTION PLANNING

A meeting shall be scheduled prior to the project start date with all facility departments involved with the construction or areas affected by it. These could include engineering, infection control, safety, security, environmental services (housekeeping) and other appropriate departments. Discussion during this meeting should consist of schedule, traffic flow around construction, frequency of future needed meetings, construction access for workers and materials, trash removal, emergency action plan, this infection control policy and the medical facility infection control policy and other appropriate discussion as needed.

Pre-design and Programming Phase:

1. Establish a special infection control task force. At a minimum, this will consist of the hospital's infection control lead and a member of the facilities engineering staff, Turner's project manager and MEP team, the architect and engineer of record. Together they will begin the Infection Control Plan consisting of the following initial steps:
 - Identify the type of construction activity likely to take place according to the Infection Control Risk Assessment (ICRA).
 - Qualify patient risk in adjacent spaces horizontally and vertically.
 - Classify the required precautions.
 - Prepare a draft action plan for each area based on the potential activity, risk and expected precautions.

The completed draft documents the measures that are to be taken in each work area for each level of patient acuity. During design and procurement, economic means and methods for achieving these objectives will be incorporated in contract documents.

2. Review the hospital's existing Infection Control Plan and benchmark best practices. Modify requirements for practical administration in a construction environment.
3. Survey existing ventilation systems to identify pre-existing conditions and determine if remediation is needed. Identify systems that will require interim engineered modifications based on the architectural program.
4. Review distances from construction activity to air intakes and consider potential remediation measures for budgeting purposes.
5. Take air quality samples to establish a baseline. Consider the need for air quality monitoring and potential methods for budgeting purposes.
6. Identify potential contaminants, probable locations and mitigation measures for budgeting purposes.
7. Perform limited substrate inspections to characterize existing conditions.

Design Phase:

1. Collaborate to determine the locations for temporary dust proof partitions that will achieve the largest practical work areas, simplify phasing and reduce cost. Provide design information for a vestibule enclosure at the construction site entry and detail practical penetration closures to maintain effective barriers.
2. Complete/edit action plans to simplify the required precautions as much as possible but not more! Consider alternative designs to mitigate excessive costs.
3. Complete investigation of any recognized contamination, determine required remediation and develop remediation contract.

Johns Hopkins Hospital New Clinical Building
Infection Control Risk Assessment

Description of Required Infection Control Precautions by Class
(continued)

During Construction Project	Upon Completion of Project
1. Isolate HVAC systems or any other work in areas close to general contamination of dust control.	1. Remove system isolation completely to restore operating of air and define associated with construction.
2. Complete all critical barriers (e.g., walls, doors, etc.).	

Johns Hopkins Hospital New Clinical Building
Infection Control Risk Assessment

Description of Required Infection Control Precautions by Class
(continued)

During Construction Project	Upon Completion of Project
1. Execute work by methods to minimize dust and debris generation.	1. When work surfaces are disturbed, use dust control measures.
2. Minimize exposure to existing life support for visual inspection.	2. When work surfaces are disturbed, use dust control measures.

Step One
Using the following table, identify the Patient Risk Groups that will be affected. If more than one risk group will be affected, select the higher risk group.

	Low Risk	Medium Risk	High Risk	Highest Risk
Class I				
Class II				
Class III				
Class IV				
Class V				
Class VI				
Class VII				
Class VIII				
Class IX				
Class X				
Class XI				
Class XII				
Class XIII				
Class XIV				
Class XV				
Class XVI				
Class XVII				
Class XVIII				
Class XIX				
Class XX				
Class XXI				
Class XXII				
Class XXIII				
Class XXIV				
Class XXV				
Class XXVI				
Class XXVII				
Class XXVIII				
Class XXIX				
Class XXX				

Johns Hopkins Hospital New Clinical Building
INFECTION CONTROL RISK ASSESSMENT

Step One
Using the following table, identify the type of construction project activity (Type A-D).

Type	Description
Type A	Inspection and Non-Invasive Activities. Includes, but is not limited to: removal of ceiling tiles for visual inspection limited to 1 sq ft per 50 sq ft of ceiling; painting (not sanding); sandblasting; electrical fire work, minor plumbing; and activities which do not generate dust or require cutting of walls or ceiling (other than for visual inspection).
Type B	Small scale, short duration activities which create minimal dust. Includes, but is not limited to: installation of telephone and computer cabling; minor duct work or electrical work above ceiling; activities to clean spaces; cutting of walls or ceilings where dust migration can be controlled.
Type C	Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies. Includes, but is not limited to: removal of walls for painting or wall covering; removal of floor coverings, ceiling tiles and casework; major duct work or electrical work above ceiling; major telephone or computer cabling activities; any activity which cannot be completed within a single work shift.
Type D	Major demolition and construction projects. Includes, but is not limited to: activities which require construction work skills; requires heavy demolition or removal of a complete building system; new construction.

Step One Determination:

4. Design and document interim modifications to HVAC systems in and around the construction area to maintain pressure relationships and system cleanliness. Indicate flows and pressures for interim bypass when required.
5. Develop optimum access routes for delivery of construction materials and removal of demolition debris from enclosed work areas to minimize intersection of hospital functions and construction forces.
6. Determine areas away from the construction site where isolated mechanical work can be fabricated.
7. Determine if areas directly below construction must be protected.
8. Develop a demolition and construction-phasing plan.
9. Specify any necessary after-hours construction.
10. Determine the need to seal windows for exterior construction activities adjacent to high-risk patient areas.
11. Determine capability of mechanical systems to maintain negative pressure within construction enclosure and positive pressure in patient areas. Indicate the need for supplemental HEPA filter units to augment existing systems.
12. Mark plans with area classifications.
13. Develop project specific worker training curriculum and tracking system.
14. Meet with the hospital's pest control contractor and discuss a coordinated approach to pest and rodent control. Discuss the use of environmentally acceptable chemical control measures.

V. PRECONSTRUCTION CONFERENCE

The infection control program shall be reviewed during the preconstruction conference.

VI. MOBILIZATION AND PROJECT START-UP

The project manager and the superintendent shall determine and will make arrangements for equipment, materials and any other items needed to comply with the infection control program and in accordance with contract requirements and estimates. They could include but are not limited to storage, material and personnel hoist, trash chutes, trash carts, trash cart covers and/or bags, temporary partition materials, tacky mats, duct tape, personal protective equipment, fire protection, first aid supplies, construction tools, temporary electrical panel that complies with OSHA Standards, cleaning equipment, supplies, etc.

VII. CONSTRUCTION PREPARATION

1. Barriers shall be constructed to contain dust, noise, fire, vapors and must address pressurization and filtering prior to demolition and construction.
2. Projects that would require barrier protection would be demolition of wallboard, plaster, ceramic tile, or ceiling tiles, floor tiles, removal of windows, removal of casework, construction of new walls, construction of new rooms, major utility changes and major equipment installation. (Ceilings may be required to provide maximum separation of patient and staff from construction exposures.) Barrier protectant may be needed elsewhere also.

3. All air vents must be blocked off and sealed to prevent contamination of duct system before construction begins.
4. Dust mats must be used at the entrance to all work areas.
5. All holes, pipes, conduits, and punctures must be sealed appropriately. Make every effort to provide an entrance for workers and materials that do not come through existing hospital used areas. If this is not possible, the construction of vestibule chambers (anteroom) may be required by the hospital management, especially during demolition when conditions become extremely dusty and dirty.
6. Ventilation shall be a high priority item and must be addressed prior to the beginning of the demolition. Where outside ventilation is not possible, mechanical equipment (such as a dust eater) and/or piping shall be provided to remove dust and vapors.
7. Personal Protective Equipment must be on site prior to any work activity beginning (hard hats, dust mask, respirators, eye protection, and gloves).
8. However, any personal safety protection, other than hard hats, that can be eliminated through engineering is encouraged.

VIII. APPROPRIATE BARRIERS

1. A closed door with duct tape applied over the frame and door is acceptable for projects which can be contained within a single room.
2. Construction, demolition or reconstruction not capable of containment within a single room must have the following barriers erected:
 - Air-tight plastic barrier that extends from floor to ceiling or a drywall barrier erected with joints covered or sealed to prevent dust and debris from escaping.
 - If above ceiling area is not to be violated, the plastic may be draped over the ceiling.
 - All seams must be sealed with duct tape.
 - An anteroom or vestibule chamber, if required during demolition, shall be constructed with a double flap of plastic to prevent escape of debris. If elevator shafts or stairways are within the construction area, they must also have proper barriers installed.

IX. DEMOLITION

1. If practical, a trash chute shall be placed on the outside of the building and all trash dropped into a waste container (dumpster). Care shall be taken when locating the trash chute so as not to affect the intake of the air handling

system. Care shall be taken to reduce dust and possible infection carrying particles on the outside of the building just as on the inside by installing barriers around the dump area and possibly water misting the area. If a trash chute is not practical and the material must be removed by carts traveling through hospital hallways, additional precautions must be taken to protect the hospital occupants. All scrap material from demolition and reconstruction shall be removed in plastic trash bags or covered carts, cans, wheelbarrows, etc. All hospital used areas that are traveled by the construction work force shall be routinely wet mopped, broom swept, vacuumed and any other means necessary and as desired by the hospital to keep the surface clean and lessen the chance of spreading particles through the hospital.

2. The routine cleaning of the demolition and construction areas shall be done as often as necessary to reduce dust in the air. Anti-static dust control spray or sweep compound shall be considered for this use. If such is used, a material mixture that is not dangerous to humans if inhaled shall be used.
3. All demolition work force employees shall be required to wear respiratory protection during all demolition work. Respiratory protection must be evaluated before work begins. If necessary, please refer to the Turner Construction respiratory program for guidelines. (See Section IV)

X. CONSTRUCTION

The movement of material to the project shall be done only after careful planning and then only with consideration for the wellbeing of the hospital occupants and with required equipment and manpower. Care must be taken to minimize odors and vapors put into the air (paint, glue, solvents, cleaners, lubricants, etc.). Consideration shall be taken to choose construction products that have minimal or non-offensive odors. Off-shift work hours shall be used to do this work if that will reduce irritants to patients, visitors and staff.

Procurement and Construction Phase:

1. Ensure Infection Control obligations are clearly defined and properly assigned in contracts.
2. Convene a pre-construction meeting with all subcontractors and Infection Control Task Force.
3. Educate all construction workers regarding infection control requirements.
4. Include infection control updates and look-ahead in weekly project team meetings during construction.
5. Monitor compliance of construction activities. Implement a convenient reporting format for workers to report observed deficiencies.
6. Relocate high-risk patients.
7. Designate break areas remote from active hospital functions to confine possible food sources to areas that can be kept litter free.
8. To the extent possible, require stored material to be scheduled for just-in-time delivery to the jobsite and maintained in tight storage piles with intact packaging to minimize potential rodent and pest harborage.

XI. CLEANUP

1. The project area shall be cleared and cleaned of all construction material and debris. The HVAC system shall be returned to its original or an improved operating condition (tape removed from vents, cleaned, balanced, etc.)
2. Temporary partitions and any other barriers cannot be removed until the completed project is cleaned, disinfected and inspected by the Hospital Construction Manager, Turner Construction, Engineers, and any other authority that has need to inspect.
3. Temporary partition and barrier material shall be removed carefully to minimize the spreading of dust and construction debris. Temporary partitions and barrier materials shall be treated as debris during their removal from the hospital.

XII. PROJECT REVIEW

If the project is being renovated and constructed in phases, Turner Construction shall conduct a total project review after each phase of the project with the required subcontractors and the hospital construction manager, department heads involved in the construction area, engineering, safety, security, infection control, housekeeping and any other appropriate departments. This meeting is used to increase cooperation on future phases and to improve the existing process by eliminating or reducing repetitive problems.

Appendix H: Asbestos

Scope and Application

Asbestos is a widely used, mineral-based material that is resistant to heat and corrosive chemicals. Typically, asbestos appears as a whitish, fibrous material which may release fibers that range in texture from coarse to silky; however, airborne fibers that can cause health damage may be too small to see with the naked eye.

Exposure to asbestos can cause asbestosis (scarring of the lungs resulting in loss of lung function that often progresses to disability and to death); mesothelioma (cancer affecting the membranes lining the lungs and abdomen); lung cancer; and cancers of the esophagus, stomach, colon, and rectum.

Governing agencies require specific engineering controls, respirators, protective clothing, exposure monitoring, hygiene facilities and practices, warning signs, labeling, recordkeeping, and medical exams.

This is a highly regulated policy with strict EPA and OSHA requirements and insurance risk implications.

Policy

All buildings constructed prior to 1980 are required to be surveyed for asbestos (phase II assessment). In addition, on projects where Turner Construction Company will be performing and/or subcontracting the demolition, renovation and/or penetration work these assessments must be reviewed.

1. It is Turner Construction Company's intent not to encounter nor engage in the remediation of asbestos materials.
2. Owners will be requested to have inspection made by a Certified Testing Company, Industrial Hygienist or Asbestos Removal Contractor. Where asbestos levels are found to be above minimally accepted levels, the owner must contract for its removal.

Prior to start of construction by Turner and/or its subcontractors, the Business Unit Director of Safety and Loss Control will ensure that written certification of acceptable asbestos levels is obtained.

3. Where accidental or unexpected encounter of asbestos occurs at a working site, the building (or significant area surrounding the discovery) shall be vacated and barricaded with suitable warning signs. Upon such discovery of asbestos on a working site the Business Director of Safety and Loss Control will immediately notify the Company Director of Safety. Access should not be allowed until written certification is obtained by the Business Unit Director of Safety and Loss Control. Copies are to be distributed to the Company Director of Safety.
4. Where documentation cannot be obtained, no work is to be performed.

Policy (Continued)

5. In some cases, based on contract requirements, the owner may insist Turner contract the abatement work. If this is the case, Turner will contract the work to a recognized environmental remediation firm. Refer to Environmental Operational Policy (Appendix A) for further clarifications.

Program Elements:

Permissible Exposure Limit

Workplace exposure must be limited to 0.1 fibers per cubic centimeter of air (0.1 f/cc), averaged over an eight-hour work shift. The excursion or short-term limit is one fiber per cubic centimeter of air (1 f/cc) averaged over a sampling period of 30 minutes.

Exposure Monitoring

Daily monitoring is required until the exposure drops below the action level (0.01 f/cc). Daily monitoring is not required where employees are using supplied-air respirators operated in the positive pressure mode.

Methods of Compliance

The exposures shall be controlled using engineering controls, to the extent feasible. Where engineering controls are not feasible to meet the exposure limit, they must be used to reduce employee exposures to the lowest levels attainable and must be supplemented by the use of respiratory protection.

Personal Protective Equipment

For any employee exposed to airborne concentrations of asbestos that exceed the PEL, the use of protective clothing such as coveralls or similar full-body clothing, head coverings, gloves, and foot covering is required. Wherever the possibility of eye irritation exists, face shields, vented goggles, or other appropriate protective equipment must be provided and worn.

In construction, there are special regulated-area requirements for asbestos removal, renovation, and demolition operations. These provisions include a negative pressure area, decontamination procedures for workers, and a "competent person" with the authority to identify and control asbestos hazards. The standard includes an exemption from the negative pressure enclosure requirements for certain small scale, short duration operations provided special work practices prescribed are followed.

Regulated Areas

Regulated areas must be established where the 8-hour time weighted average (TWA) or 30-minute excursion values for airborne asbestos exceed the prescribed permissible exposure limits. Only authorized persons wearing appropriate respirators can enter a regulated area. In regulated areas, eating, smoking, drinking, chewing tobacco or gum, and applying cosmetics are prohibited.

Warning signs must be displayed at each regulated area and must be posted at all approaches to regulated areas.

Asbestos (Continued)

Page 3

Hygiene Facilities and Practices

Clean change rooms must be furnished by the abatement contractor for employees who work in areas where exposure is above the TWA and/or excursion limit. Two lockers or storage facilities must be furnished and separated to prevent contamination of the employee's street clothes from protective work clothing and equipment. Showers must be furnished so that employees may shower at the end of the work shift. Employees must enter and exit the regulated area through the decontamination area.

The equipment room must be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective clothing and equipment.

Lunchroom facilities for those employees must have a positive pressure, filtered air supply and be readily accessible to employees. Employees must wash their hands and face prior to eating, drinking, or smoking. The subcontractor must ensure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface fibers have been removed from the clothing or equipment.

Employees may not smoke in work areas where they are occupationally exposed to asbestos.

Accidental Exposure

In the event Presumed Asbestos Containing Material (PACM) has been uncovered or discovered on a Turner project, the superintendent is required to shut the job down or the portion of the project where the exposure has occurred, evacuate the area, regulate the area, and notify the Owner for further instructions. Turner can hire a consulting firm to test the suspect material.

Medical Examination

Medical examinations must be made available annually for workers exposed above the action level or excursion limit for 30 or more days per year or who are required to wear negative pressure respirators; chest X-rays are at the discretion of the physician.

Respirators

Respirators will be required to protect against the particular substance encountered according to Turner Construction's Respiratory Protection Program.

Labels and Signage

Caution labels must be placed on all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers.

Training Requirements

All individuals performing class III asbestos work are required to be trained according to the regulations of the state in which the work occurs.

Recordkeeping

The employer must keep an accurate record of all measurements taken to monitor employee exposure to asbestos. This record is to include: the date of measurement, operation involving exposure, sampling and analytical methods used, and evidence of their accuracy; number, duration, and results of samples taken; type of respiratory protective devices worn; name, social

security number, and the results of all employee exposure measurements. This record must be kept for 30 years.

Lead

Scope and Application

Lead is a hazardous material and thus is highly regulated to protect people (workers and public) and the environment.

Lead, like asbestos, can be found on most job sites as it was used in many products and in many ways.

Lead is a highly toxic, cumulative poison that serves no useful purpose once introduced into the human biological system. Lead and lead compounds have many routes of entry into the human body. Routes of entry primarily include inhalation and ingestion.

Inhalation of lead fumes may occur during the melting process when pure lead or lead containing compounds are heated to extreme temperatures, i.e., plumbing or soldering.

Dust containing lead is formed during sandblasting, grinding, sanding or cutting processes.

Mist containing lead is formed during spray painting operations which use lead base paints.

Policy

Turner Construction's policy is to eliminate the hazards created by improper handling of lead materials, nor to engage in, or subcontract for, the removal of lead.

Owners will be requested to have an inspection made by a certified testing company, industrial hygienist, or lead removal contractor. Where lead is found the owner must contract for its removal.

Certification that the lead has been removed and the area is safe to work must be obtained by the project superintendent.

In the event that the Owner requests Turner to abate the lead abatement under Turner's contract, Turner must subcontract the abatement work to an approved licensed Lead Remediation Contractor. To do so, please contact the Business Unit Director of Safety and Loss Control.

Refer to Environmental Operational Policy for further clarification.

Requirements

Exposure Assessment

If lead is suspected, an exposure assessment must be performed. Protection at levels

appropriate to the exposure levels of the task being performed must be used until the assessment results are known. An exposure assessment includes:

LEAD (Continued)

- Initial air monitoring
- Periodic air monitoring where results:
 - Less than the Action Level (30 ug/m3): Sample when process changes
 - Action Level to PEL (50 ug/m3): Sample every 6 months
 - PEL: Sample every 3 months
- Employee Notification in writing within 5 working days after the receipt of sample results.

Engineering Controls

Because lead is a cumulative and persistent toxic substance and because lead-caused health effects may result from low levels of exposure over prolonged periods of time, engineering controls and good work practices must be used where feasible to minimize employee exposure to lead. At a minimum, exposures must not exceed the OSHA interim final PEL of 50 micrograms per cubic meter of air (50 ug/m3) averaged over an 8-hour-period. When feasible engineering controls and work practices controls cannot reduce worker exposure to lead to at or below 50 ug/m3, respirators must be used to supplement the use of engineering and work practice controls.

A competent person shall review all site operations and stipulate the specific engineering controls and work practices designed to reduce worker exposure to lead.

Exhaust Ventilation

If required by the concentrations of lead, power tools used for the removal of lead-based paint shall be equipped with dust collection shrouds or other attachments in order to exhaust the contaminated air through a high-efficiency particulate air (HEPA) vacuum system. Operations such as welding, cutting/burning, heating shall be provided with local exhaust ventilation. HEPA vacuums shall be used during clean-up activities.

Housekeeping

An effective housekeeping program involves at least daily removal of accumulations of lead dust and lead-containing debris. Vacuuming lead dust with high-efficiency particulate air (HEPA) - filtered equipment or wetting it with water before sweeping is effective control measures. Such cleaning operations shall be conducted, whenever possible, at the end of the day, after normal operations cease. Furthermore, all persons doing the cleanup shall be provided with suitable respiratory protection and personal protective clothing to prevent contact with lead.

In addition, all lead-containing debris and contaminated items accumulated for disposal shall be collected and put into sealed impermeable bags or other closed impermeable containers. Bags and containers shall be appropriately labeled as lead-containing waste. These measures are especially important as they minimize additional sources of exposure that engineering controls generally are not designed to control.

LEAD (Continued)

Respirator Protection

In the event that respirator protection is necessary all Turner employees shall follow Turner Construction Company's Respiratory Protection Program.

Medical Surveillance

When a construction employee is occupationally exposed to lead at or above the action level of 30 ug/m3 on any one day in a calendar year, the employee must be provided initial medical surveillance consisting of biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels. Blood lead levels are currently the best indicator of personal lead exposure. Workers potentially exposed to lead at or above the action level must be monitored for the presence of lead in the blood and the effects of lead on the blood-forming system. Full medical surveillance is to be provided to employees exposed to lead at or above the action level for more than 30 days per year.

The following conditions necessitate an immediate medical consultation including, as determined by the qualified medical provider, a physical examination and a blood sample for lead analysis (biological monitoring):

- whenever a worker develops signs or symptoms associated with lead toxicity; and
- before a worker restarts work following medical removal.

Biological Monitoring

Baseline blood levels are a requirement prior to the start of all projects contaminated with lead. The purpose of biological monitoring is to identify workers with elevated blood lead levels. The data from biological monitoring is objective evidence of a worker's body burden from lead exposure and this data can be used to follow changes in worker exposure.

Blood lead and zinc protoporphyrin (ZPP) or free erythrocyte protoporphyrin (FEP) shall be monitored for those workers exposed to lead. In general, workers in high-risk occupations shall be monitored as often as needed to prevent adverse health effects.

Recordkeeping

Turner must maintain any employee exposure and medical records to document ongoing employee exposure, medical monitoring and medical removal of workers. This data provides a base to properly evaluate the employee's health.

Employers must properly record cases on their OSHA form 300 when the worker:

- has a blood lead level that exceeds 50 mg/dl;
- has symptoms of lead poisoning, such as colic, nerve damage, renal damage, anemia, or gum problems; or receives medical treatment to lower blood lead levels or for lead poisoning.

LEAD (Continued)

In addition, employees or former employees, their designated representatives, and OSHA must be provided access to exposure and medical records in accordance with 29 CFR 1910.20.

Silica Dust

Scope and Application

Silica is the main component found in sand, quartz and granite rock. Excessive amounts of silica dust may be generated during activities such as: sandblasting, rock drilling, roof bolting, foundry work, stonecutting, drilling, quarrying, brick/block/concrete cutting, gunite operations, lead-based paint encapsulate applications, asphalt paving, cement products manufacturing, demolition operations, hammering, and chipping and sweeping concrete or masonry.

Silica can cause silicosis, a serious and sometimes fatal respiratory disease. Silicosis develops from being exposed to and breathing in silica dust. It occurs in direct proportion to the percentage and the concentration of silica in the air and to the duration of exposure. The tiny hairs, mucous membranes, and other protective mechanisms of your upper respiratory tract and bronchi stop large silica particles, but the smallest dust particles are carried to your airways. These silica particles become lodged in the tiny air sacs of the lungs, which can cause scarring which inhibits your lungs abilities to provide oxygen to the bloodstream.

Symptoms of silicosis can either be chronic, appearing after 5 to 10 years of being exposed to invisible silica dust without using respiratory protection, or symptoms can be acute appearing after only a few weeks of working in thick clouds of silica without respiratory protection. Early stages of silicosis often go unnoticed, but continued exposure may cause shortness of breath, possible fever and sometimes-bluish earlobes or lips. Fatigue, extreme shortness of breath, loss of appetite and chest pain occurs after a significant duration of exposure. It is a non-reparable respiratory disease. That is, once the deep alveolar regions of the lungs are damaged and scarred, the lung will decrease its function representative to the duration and extent of exposure. In extreme cases, respiratory failure will occur, and cause death.

Silica is also capable of causing lung cancer with prolonged heavy occupational exposures. Workers with impaired lung function due to silica exposure are also more susceptible to other respiratory disease such as tuberculosis.

Requirements

In order to determine whether a product contains silica, the Material Safety Data Sheet must be obtained and inspected. In the event silica is present in products on-site, the following safe working procedures shall be followed to eliminate or control silica dust exposure:

1. Engineering controls should be utilized to eliminate the hazard whenever feasible.
2. Industrial hygiene exposure monitoring is required to be conducted in order to confirm that the engineering and administrative controls in place are effective and whether personal protective equipment (PPE) is or is not required.
3. After working with products that contain silica, each individual will be required to thoroughly wash their hands before eating, drinking or smoking. Eating, drinking or smoking near silica or in a silica regulated areas is strictly prohibited.

Silica Dust (Continued)

4. Always wet dry materials and surfaces before cutting, chipping, grinding, sanding, sweeping or cleaning. This engineering control shall be used to the greatest extent feasible, so that airborne concentrations of silica are minimized.
5. Use power tools with built-in high-efficient particulate air (HEPA) dust extraction units to capture the dust before it is released into the exhausted air.
6. For abrasive blasting, replace silica sand with less toxic materials. The National Institute for Occupational Safety and Health highly discourages the use of sand or any abrasive with more than 1% crystalline silica in it. As an alternative, garnet, slags, and steel grit and shot may be suitable substitutes.
7. Make mandatory for all subcontractors to supply any exposure monitoring, testing, or engineering information regarding silica exposure in their operations prior to beginning work. An example is the masonry contractor using brick/block saws and associated experience data that the subcontractor has obtained.

Respiratory Protection

In the event that the controls mentioned above are not possible, the Turner Construction Company "*Respiratory Protection Program*" will be required. Dust masks, or particulate respirators are not an acceptable respiratory protective measure. At a minimum, NIOSH approved respiratory protection, as deemed suitable by the competent person, will be required. The type of respirator needed will depend upon the silica concentration levels. Contact the Business Unit Director of Safety and Loss Control for further assistance in the prescription of appropriate respiratory protection.

Medical surveillance is required for all employees exposed to silica operations requiring respiratory protection.

Training

All individuals working with silica containing products shall be trained in the hazardous effects of being exposed to silica dust in accordance with Turner Construction Company policy on "*Hazard Communication Program*".

All individuals performing tasks involving sanding, chipping, grinding, scraping, cutting, crushing or drilling are required to be trained in the proper use of such tools, in addition to the proper engineering and administrative methods of reducing or eliminating silica dust.

Each individual required to wear respiratory protective equipment will be trained in accordance with Turner Construction Company policy "Respiratory Protection Policy".

Record keeping

All training conducted regarding silica shall be documented with the type of training and the signatures of all that attended the training. Training shall be updated on an annual basis. All medical records shall be retained for a period of 30 years plus duration of employment.

Respiratory Protection Policy

Scope and Application

Establish the minimum requirements for Turner Construction Company (TCCo) and subcontractors to utilize proper respiratory protection. This procedure applies in its entirety to all Turner projects.

Applicable Definitions

- (a) Air Purifying Respirator-A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.
- (b) Atmosphere Supplying Respirator-A respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators and self-contained breathing apparatus units.
- (c) Escape-Only Respirator-A respirator intended to be used only for emergency exit.
- (d) Exposure-Exposure to a concentration of an airborne contaminant that would occur if the employee was not using respiratory protection.
- (e) Filtering Facepiece (Dust Mask)-Means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.
- (f) Immediately Dangerous to Life or Health (IDLH) - An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.
- (g) Oxygen Deficient Atmosphere- An atmosphere with an oxygen content below 19.5% by volume.
- (h) Powered Air Purifying Respirator- An air purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.
- (i) User Seal Check- An action performed by the respirator user to determine if the respirator is properly seated to the face.

Responsibilities

- The superintendent has overall responsibility for establishing and ensuring compliance with this procedure.
- The field safety and health staff is responsible for implementing and/or monitoring activities associated with this procedure. The Business Unit Director of Safety is designated the Respiratory Protection Program Administrator.

Respiratory Protection Policy (Continued)

- It is the responsibility of all managers and supervisory personnel to enforce this procedure and of each employee to follow it.

General Requirements

- a. Respirator wearers cannot be afforded protection from hazardous airborne contaminants when conditions prevent a complete gas-tight face seal. Facial hair, head hair, and eyeglasses are among these physical obstructions. While eyeglasses are in the category of obstructions that prevent a gas-tight face seal, primarily in the case of full-face supplied-air respirators, this problem is correctable by use of mounting devices to hold the eyeglass frames inside the respirator face piece. The criteria are that there can be no obstruction of contact between the wearer's skin and the mask whatsoever. Beard stubble constitutes a physical obstruction.
- b. As a condition of employment, affected employees shall be required to be clean shaven each day when assigned to use respiratory protection.
- c. Candidates for employment objecting to this policy shall be made aware that their versatility may be limited and that this can affect their job assignments. Consequently, an individual's attitude regarding the removal of gas-tight face seal obstructions should be assessed prior to employment.
- d. Respirators shall be provided by the employee's employer whenever a qualified person determines that such equipment is necessary to protect the health of the employee from significant inhalation exposure.
- e. Only that respiratory equipment that has been certified by the National Institute for Occupational Safety and Health (NIOSH) shall be provided.
- f. Employees shall be instructed and trained in the need for, use of, sanitary care of, and limitations of respiratory equipment prior to assignment to activities requiring its use.
- g. Respirator users shall perform a user seal check before entering a potentially contaminated atmosphere.
- h. The employer shall provide, repair, or replace respiratory protective equipment as may be required due to wear and deterioration.
- i. Means of cleaning all respiratory protective equipment shall be provided.
- j. Only those employees who are trained in accordance with the regulations and medically qualified to wear respirators shall be assigned to work requiring use of respirators.

Implementation

Specific procedures and requirements for the use of respiratory equipment shall be developed as part of safety and health work plans. Those specific procedures will incorporate by reference into the general requirements set forth in this procedure.

Respiratory Protection Policy (Continued)

(a) Respiratory Selection

- (1) When respirator use is required, only properly cleaned and maintained NIOSH certified respirators shall be used. Filtering face pieces (dust masks) may only be used with specific approval of the Business Unit Director of Safety and Loss Control.
- (2) Employees shall be allowed to pick the most comfortable respirator from a selection including respirators of various sizes from different manufacturers.
- (3) Selection of respirators shall be approved by the BUSD in all cases, and shall be based on the principles set forth in the NIOSH Respirator Decision Logic, and will address the following considerations:
 - (i) Nature of the hazard - the chemical and physical properties, toxicity, and concentration of hazardous material or mixture of materials.
 - (ii) Potential for oxygen-deficient atmospheres - entry into oxygen-deficient atmospheres is **prohibited** without prior approval of the Business Unit Director of Safety and Loss Control.
 - (iii) Potential for Immediately Dangerous to Life and Health (IDLH) Atmospheres - entry into any IDLH atmosphere is **prohibited** without prior approval of the Business Unit Director of Safety.
 - (iv) Irritant or Corrosive Atmospheres - Respirators selected must provide adequate face and eye protection. The contaminant or mixture of contaminants must have adequate warning properties (odor, irritation, or taste) to indicate respirator breakthrough if an air-purifying device is used.
- (4) In all cases where OSHA has required that a specific respirator is used (carcinogen standards, etc.), the specified respirator or one providing equal or better protection shall be used.
- (5) Air purifying respirators shall NOT be used for protection against the following materials. This is only a partial listing; contact the BUSD for further information.

Acrolein	Methyl chloride
Aniline	Methylene chloride
Arsine	Nickel carbonyl
Bromine	Nitrobenzene
Carbon monoxide	Nitrogen oxides
Diisocyanates	Nitroglycerine
Dimethylaniline	Nitromethane
Dimethyl sulfate	Ozone
Hydrogen cyanide	Phosgene
Hydrogen fluoride	Phosphine
Hydrogen selenide	Phosphorus trichloride

Respiratory Protection Policy (Continued)

Page 4

Hydrogen sulfide	Stibine
Methanol	Sulfur chloride
Methyl	bromide

(b) Use of Corrective Lens Eyewear with Respirators

- (1) Management shall assess which employees in their operations wear eye glasses routinely, determine what types (make and models) of respiratory protective masks are used, and assure that the appropriate frames or ophthalmic device hangers are obtained and provided at company expense. No devices that interfere with the seal of the facepiece to the user's face are permitted.

(c) Employee Training and Instruction

- (1) The basic respiratory training program shall include, as a minimum, the following:
 - The hazards of the atmospheric contaminants necessitating the use of respirators.
 - Instruction in the need for, use, sanitary care, and limitations of each respirator type.
 - Opportunity for "hands-on" experience with respirators.
 - Proper fitting, including demonstrations and practice in wearing, adjusting, and determining the fit of the respirator. A selection of respirators shall be available to determine the most comfortable respirator and the best fit.
 - How to perform a user seal check of the facepiece-to-face seal.
 - A familiarization period of wear in normal air.
 - For negative pressure respirators, wearing the, respirator in an irritant fume test atmosphere for qualitative fit testing. All qualitative fit testing shall be performed by a qualified person using the protocol found in Attachment A of this procedure or other protocol as designated by specific standards (e.g., asbestos, benzene). Powered air purifying respirators (PAPRs) shall be worn in a test atmosphere with the power supply disconnected to evaluate fit in the negative pressure mode. Positive pressure air supplied or self-contained respirators shall be fit tested by using an identical face piece in a negative pressure mode, or by temporarily converting the original respirator to negative pressure.
 - Qualitative or quantitative fit testing shall be performed annually, or more frequently as required by law. The field safety and health staff will determine fit test requirements.
 - Instruction in the nature of the respiratory hazards, whether acute, chronic, or both, and a description of potential health effects if the respirators are not used.
 - Classroom and field training to recognize and cope with emergency situations (including respirator failure).
 - The general requirements of 29 CFR 1910.134 or 1926.103 whichever is applicable.

Respiratory Protection Policy (Continued)

- (2) Subject training shall be repeated annually, or when the required respirator changes or when the employee's performance indicates the need for re-training. Each employee receiving such training shall complete the Respiratory Training Completion Form or equivalent.

(d) **Respirator Inspection, Cleaning, Maintenance, and Storage**

- (1) General: Attachment C provides minimum procedures for cleaning and sanitizing respirators. Maintenance and care of respirators shall be adjusted to the type of facility, working conditions, and hazards involved, and shall include the following basic elements:

- Inspection for defects and/or deterioration. Cleaning and disinfecting in accordance with manufacturers' instruction. Repair as necessary. Establishment and maintenance of a recordkeeping system to document respiratory inspection, repair, and maintenance. Proper storage.

- (2) Inspection, Maintenance, and Storage

- All respirators shall be inspected routinely before, during, and after each use by the user. Any defects shall be reported to supervision. No defective respirator shall be issued or worn.
- Defective respirators shall be tagged and returned for repair.
- Respirators maintained for emergency use (such as SCBA) shall be inspected and sanitized after each use and inspected at least monthly. A certification of the most recent inspection shall be maintained on the respirator or the storage container and shall include the inspector's identification, the results of the inspection, the date, and a respirator identification number.
- Routinely used respiratory equipment shall be regularly cleaned, inspected, and sanitized by an individual qualified by experience or training to do the work.

Respiratory Protection Policy (Continued)

Implementation (Continued)

- Inspections of respirators shall include the following:
 - ✓ A check of respirator function, tightness of connections, and the condition of the various parts including but not limited to: the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters; and
 - ✓ A check of elastomeric parts for pliability and signs of deterioration.
- Other types of respiratory equipment shall be maintained according to the manufacturer's instructions.
- Where respirators are assigned to individual employees, area management shall ensure compliance with cleaning and maintenance requirements by periodic inspection and field audits of respiratory equipment.
- Respiratory equipment shall not be passed from one person to another until it has been cleaned and sanitized.
- When not in use, respirators shall be stored to protect against dust, sunlight, extreme temperatures, excessive moisture, damaging chemicals, and physical damage.
- Repairs or adjustments to respirators shall be made only by persons qualified by training to perform such operations, and only the manufacturer's NIOSH certified parts designed for the respirator shall be used.
- Repairs shall be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.
- Reducing and admission valves, regulators and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

(e) Air Purifying Respirators (APR)

- (1) Fit testing shall be accomplished in accordance with Attachment A of this procedure.
- (2) When APRs are worn, employees shall change the filter-cartridge elements daily, in the case of cartridges used for non-particulate

Respiratory Protection Policy (Continued)

contaminants, or immediately if "breakthrough" is perceived; and, for other filter cartridges whenever an increase in breathing resistance is detected.

Any instance of breakthrough shall be reported to the supervisor without delay so that the selection of the respirator may be reviewed.

(f) Powered Air Purifying Respirators (PAPR)

- (1) When PAPRs are worn, employees shall change filter/cartridges elements daily, in the case of cartridges used for non-particulate contaminants, or immediately if "breakthrough" is perceived; and for other filter cartridges:

- Whenever an increase in breathing resistance is detected, or
- When airflow through filter elements decreases to an unacceptable level, as indicated by the manufacturer's test device.

Any instance of breakthrough shall be reported to the Business Unit Director of Safety and Loss Control, without delay so that the selection of the respirator may be reviewed.

(g) Compressed Air Systems/Atmosphere-Supplying Respirators

(1) Air Quality

- Compressed air used for respiration shall be of high purity, and shall meet, as a minimum, the requirements for the specification for Grade D breathing air as described in Compressed Gas Association Specification G-7.1 1989. The supplier shall certify compliance with these requirements for each lot of breathing air supplied.
- Breathing air shall be free from harmful dusts, fumes, mists, vapors, gases, or odors.
- Oxygen shall NOT be used at any time in open-circuit SCBAs or air-line respirators.
- Mixed or blended air shall not be used for breathing purposes.

(2) Compressed Air Cylinder Systems (Cascade)

- Breathing air cylinders shall be legibly identified with the word "AIR" by means of stenciling, stamping, or labeling as near to the valve ends as practical.
- Cascade systems shall be equipped with low pressure warning bells or similar warning devices to indicate air pressure in the manifold below 500 psi.

Respiratory Protection Policy (Continued)

● **Implementation** (Continued)

- When a cascade system is used to supply breathing air, one employee shall be assigned as safety standby within audible range of the low-pressure alarm.
- When a cascade system is used to recharge SCBA air cylinders, it shall be equipped with a high-pressure supply hose and coupling rated at a capacity of at least 3000 psi.
- Air-line couplings shall be incompatible with outlets for other gas systems to prevent inadvertently supplying air-line respirators with nonrespirable gases or oxygen.
- The air pressure at the hose connection to positive-pressure respiratory equipment shall be within the range specified in the approval of the equipment by the manufacturer.
- Cylinders shall be stored and handled to prevent damage to the cylinder or valve.
- Cylinders shall be stored upright with the protective valve cover in place (e.g., supported with substantial rope or chain in the upper one-third of the cylinder, or in racks designed for this purpose) and, in such a way as to prevent the cylinder from falling.
- Cylinders shall not be dropped, dragged, rolled, allowed to strike each other, or to be struck violently.
- Cylinders shall never be exposed to temperatures exceeding 125°F.
- Cylinders with visible external damage, evidence of corrosion damage, or previous exposure to fire shall not be accepted or used.
- Only cylinders approved within current hydrostatic test periods shall be used.

(3) Compressor Supplied Breathing Air

All compressors used for supplying breathing air shall be equipped with the following safety and standby devices:

- The compressor intake shall be located to assure that only respirable (uncontaminated) air is admitted. This requires attention to the location of the compressor intake with respect to compressor engine exhaust, chemical storage or use areas, and suitable intake screening or filtration.

- For non-oil lubricated compressors, appropriate means shall be taken to assure that the carbon monoxide concentrations in breathing air do not exceed 10 ppm. These means may include carbon monoxide filters, continuous carbon monoxide monitors, proper location of the air intake, frequent monitoring of air quality or others.
- Oil lubricated compressors - if an oil-lubricated compressor is used to supply breathing air, it shall be equipped with both of the following devices:
 - Continuous reading carbon monoxide monitoring system set to alarm should the carbon monoxide concentration exceed 10 ppm.
 - High temperature alarm, which will activate when the discharge air exceeds 110% of the normal operating temperature in degrees Fahrenheit.
- A designated employee shall be assigned as safety standby and shall remain continuously within audible range of the alarms.
- An inline purifying filter assembly to remove oil, condensed water, particulate, odors, and organic vapors shall be used in conjunction with the air compressor. Filtering components shall be maintained and replaced or refurbished according to the manufacturer's instructions. A record shall be kept at the compressor indicating the most recent servicing, and the signature of the authorized person performing the service.
- Routine inspection and maintenance of the air compressor shall be performed in accordance with manufacturer's specifications.
-

(h) Emergency Use Respirators

- (1) These respirators are intended for use in areas where escape with a short-term (5-10 minute) air supply is necessary. They may be used as adjuncts to airline

Respiratory Protection Policy (Continued)

pressure demand respirators as a backup air supply, or as independent emergency devices in areas where respiratory protection is not normally required.

- (2) Appropriate training shall be completed and documented prior to assigning employees to tasks or locations subject to the use of these respirators.
- (3) Emergency use respirators shall never be used as primary standby respirators for confined space entry.
- (4) Emergency use respirators shall be inspected before entering a potentially contaminated atmosphere.

(i) Medical Surveillance

- (1) A medical questionnaire for respiratory users shall be completed by all potential candidates, prior to respiratory use (see Attachment D). A more comprehensive medical evaluation may be required based on the results of the questionnaire, or the details of the work assignment.
- (2) No employee shall be fit tested, or assigned to a task that requires the use of a respirator unless it has been determined that he/she is physically able to perform the work while using the required respirator.
- (3) If an employee experiences difficulty in breathing during the fit test or during use, he or she shall be re-examined by a physician to determine whether the employee can wear a respirator while performing the required duty.
- (4) Once a medical determination has been made concerning to an employees' physical ability to wear a respirator, a review of the employee's health status shall be made at least annually.

Program Evaluation

Periodic evaluations of the respirator program will be made by the respiratory protection program administrator. The program evaluation will:

- (a) Ensure that the provisions of the written program are being effectively implemented, and that the program continues to be effective.
- (b) Regularly consult with respirator users to assess the employees' views on program effectiveness and to identify any problems. Any deficiencies discovered will be corrected.
- (c) At a minimum, the following factors will be assessed during the evaluation:

Respiratory Protection Policy (Continued)

- Respirator fit, including any interference with workplace productivity related to the use of respirators.
- Appropriateness of respirator selection.
- Proper use of respirators under actual workplace conditions.
- Proper respirator maintenance.

Reference

These reference attachments used for documenting activities associated with this procedure. Requirements for record distribution, retention, and maintenance are established within applicable project planning documents and are the responsibility of the employer.

Reference:

Refer to Fit Testing Procedures (attached)

Refer to User Seal Check Procedures (attached)

Refer to Respirator Cleaning Procedures (attached)

Refer to OSHA Respirator Medical Evaluation Questionnaire (attached)

Refer to Information for Employees Using Respirators when Not Required (attached)

Refer to Respirator Training Completion Form (attached)

Fit Testing Procedures **(Mandatory)**

A. General Requirements

The employer shall conduct fit testing using the following procedures. The requirements in this Attachment apply to all fit test methods, both qualitative and quantitative.

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits the user.
2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.
3. The test subject shall be informed that he/she is being asked to select a respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly will provide adequate protection.
4. The test subject shall be instructed to hold each chosen face piece up to the face and eliminate those that obviously do not give an acceptable fit.
5. The more acceptable face pieces are to be noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item A.6. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.
6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
 - (a) Position of the mask on the nose
 - (b) Room for eye protection
 - (c) Room to talk
 - (d) Position of the mask on face and cheeks
7. The following criteria shall be used to help determine the adequacy of the respirator fit:
 - (a) Chin properly placed
 - (b) Adequate strap tension, not overly tightened
 - (c) Fit across nose bridge
 - (d) Respirator of proper size to span distance from "nose to chin
 - (e) Tendency of respirator to slip
 - (f) Self-observation in mirror to evaluate fit and respirator position

Fit Testing Procedures (Continued)

8. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in Attachment B of this procedure or those recommended by the respirator manufacturer which provide equivalent protection to the procedures in Attachment B. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another face piece shall be selected and re-tested if the test subject fails the user seal check tests.
9. The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel that interferes with a satisfactory fit shall be altered or removed.
10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate to determine whether the test subject can wear a respirator while performing her or his duties.
11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be re-tested.
12. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.
13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use that could interfere with respirator fit.
14. Test Exercises. The following test exercises are to be performed for all fit testing methods prescribed in this Attachment. The test subject shall perform exercises in the test environment, in the following manner:
 - (a) Normal breathing. In a normal standing position without talking, the subject shall breathe normally.
 - (b) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
 - (c) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.
 - (d) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).
 - (e) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Fit Testing Procedures (Continued)

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

- (f) Grimace. The test subject shall grimace by smiling or frowning. (This applies only to quantitative fit testing; it is not performed for qualitative fit testing.)
- (g) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type quantitative or qualitative units that do not permit bending over at the waist.
- (h) Normal breathing, same as exercise (a). Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

B. Qualitative Fit Test (QLFT) Protocol

General

- (a) The employer shall ensure that persons administering qualitative fit tests are able to prepare test solutions, calibrate equipment and perform tests properly, recognize invalid tests and ensure that test equipment is in proper working order.
- (b) The employer shall ensure that qualitative fit test equipment is kept clean and well maintained so as to operate within the parameters for which it was designed.

Irritant Smoke (Stannic Chloride) Protocol

This qualitative fit test uses a person's response to irritating chemicals released in the "smoke" produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

(a) General Requirements and Precautions

- (1) The respirator to be tested shall be equipped with P100 series (HEPA) filters.
- (2) Only stannic chloride smoke tubes shall be used for this protocol.
- (3) No form of test enclosure or hood for the test subject shall be used.
- (4) The smoke can be irritating to the eyes, lungs and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity

Fit Testing Procedures (Continued)

varies and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.

- (5) The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the test or the build-up of irritant smoke in the general atmosphere.

(b) Sensitivity Screening Check

The person to be tested must demonstrate his or her ability to detect a weak concentration of the irritant smoke.

- (1) The test operator shall break both ends of a ventilation smoke tube containing stannic chloride, and attach on end of the tube to an aspirator squeeze bulb or to a low flow air pump set to deliver 200 milliliters per minute. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.
- (2) The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.
- (3) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties and to determine if he/she can detect the smoke. The test operator shall carefully direct a small amount of the smoke in the test subject's direction to determine if he/she can detect it.

(c) Irritant Smoke Fit Test Procedure

- (1) The person being fit tested shall don the respirator without assistance, and perform the required user seal check(s).
- (2) The test subject shall be instructed to keep his/her eyes closed.
- (3) The test operator shall direct the stream of irritant smoke toward the face-seal area of the test subject, using the squeeze bulb or the low flow pump. The test operator shall begin at least 12 inches from the face piece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.
- (4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.
- (5) The exercises identified in section A 14 above shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.

Fit Testing Procedures (Continued)

- (6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being re-tested must repeat the entire sensitivity check and fit test procedure.
- (7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether she/he still reacts to the smoke. Failure to evoke a response shall void the fit test.
- (8) If a response is produced during this second sensitivity check, then the fit test is passed.

User Seal Check Procedures **(Mandatory)**

The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this attachment, or the respirator manufacturers recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

1. Facepiece Positive and/or Negative Pressure Checks
 - A. Positive pressure check. Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replace it after the test.
 - B. Negative pressure check. Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seals, inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

2. Manufacturer's Recommended User Seal Check Procedures

The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of these positive and/or negative pressure seal check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.

Respirator Cleaning Procedures **(Mandatory)**

These procedures are provided for use when cleaning respirators. They are general in nature, and the cleaning recommendations provided by the manufacturer of the respirators used by their employees may be used as an alternative, provided such procedures are as effective as those listed here. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth below, i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

1. Procedures for Cleaning Respirators

- A. Remove filters, cartridges or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure- demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- B. Wash components in warm (43' C (110' F) maximum water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate removal of dirt.
- C. Rinse components thoroughly in clean, warm 430 C (1100 F) maximum, preferably running water. Drain.
- D. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 - (1) Hypochlorite solution (50 ppm chlorine) made by adding approximately one milliliter of commercial laundry bleach to one liter of water at 430 C (1100 F); or
 - (2) Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliter of tincture of iodine (6 to 8 grams of NH4I or KI per 100 milliliter of 45% alcohol) to one liter of water at 430 C (110' F); or
 - (3) Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- E. Rinse components thoroughly in clean, warm (430 C (1100 F) maximum) preferably running water. Drain. The importance of thorough rinsing cannot be over-emphasized. Detergents or disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- F. Components should be hand dried with a clean lint free cloth or air dried.
- G. Reassemble facepiece, replacing filters, cartridges and canisters where necessary.
- H. Test the respirator to ensure that all components work properly.

OSHA Respirator Medical Evaluation Questionnaire
(The use of a medical clinics questionnaire is acceptable)

To the employer:

Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee: Can you read (circle one): Yes No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1 (Mandatory) *The following information must be provided by every employee who has been selected to use any type of respirator. (Please print).*

1. Today's date: _____
2. Your Name: _____
3. Your age (to nearest year) _____
4. Sex (circle one) Male Female
5. Your height: _____ - ft. _____ in.
6. Your weight: _____ -lbs.
7. Your job title: _____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include area code): _____

The best time to phone you at this number: _____
9. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one) Yes No
11. Check the type of respirator you will use (you can check more than one category):
 - a. N, R, or P disposable respirator (filter mask, non-cartridge type only).
 - b. Other type (for example, half- or full-facepiece type, powered air purifying, supplied air, self-contained breathing apparatus).

OSHA Respirator Medical Evaluation Questionnaire (Continued)

12. Have you ever worn a respirator (circle one): Yes No

If "yes" what type(s): _____

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no".)

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes No

2. Have you ever had any of the following conditions?

a. Seizures (fits):	Yes	No
b. Diabetes (sugar disease):	Yes	No
c. Allergic reactions that interfere with your breathing:	Yes	No
d. Claustrophobia (fear of closed-in places):	Yes	No
e. Trouble smelling odors:	Yes	No

3. Have you ever had any of the following pulmonary or lung problems?

a. Asbestosis:	Yes	No
b. Asthma:	Yes	No
c. Chronic bronchitis:	Yes	No
d. Emphysema:	Yes	No
e. Pneumonia:	Yes	No
f. Tuberculosis:	Yes	No
g. Silicosis:	Yes	No
h. Pneumothorax (collapsed lung):	Yes	No
i. Lung cancer:	Yes	No
j. Broken ribs:	Yes	No
k. Any chest injuries or surgeries:	Yes	No
1. Any other lung problem that you've been told about:	Yes	No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?

a. Shortness of breath:	Yes	No
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline:	Yes	No
c. Shortness of breath when walking with other people at an ordinary pace on level ground:	Yes	No
d. Have to stop for breath when walking at your own pace on level ground:	Yes	No

OSHA Respirator Medical Evaluation Questionnaire (Continued)

- | | | |
|---|-----|----|
| e. Shortness of breath when washing or dressing yourself: | Yes | No |
| f. Shortness of breath that interferes with your job: | Yes | No |
| g. Coughing that produces phlegm (thick sputum): | Yes | No |
| h. Coughing that wakes you early in the morning | Yes | No |
| i. Coughing that occurs mostly when you are lying down: | Yes | No |
| j. Coughing up blood in the last month: | Yes | No |
| k. Wheezing: | Yes | No |
| l. Wheezing that interferes with your job: | Yes | No |
| m. Chest pain when you breathe deeply: | Yes | No |
| n. Any other symptoms that you think may be related to lung problems: | Yes | No |
5. Have you ever had any of the following cardiovascular or heart problems?
- | | | |
|---|-----|----|
| a. Heart attack: | Yes | No |
| b. Stroke: | Yes | No |
| c. Angina: | Yes | No |
| d. Heart failure: | Yes | No |
| e. Swelling in your legs or feet (not caused by walking): | Yes | No |
| f. Heart arrhythmia (heart beating irregularly): | Yes | No |
| g. High blood pressure: | Yes | No |
| h. Any other heart problem that you've been told about: | Yes | No |
6. Have you ever had any of the following cardiovascular or heart symptoms?
- | | | |
|---|-----|----|
| a. Frequent pain or tightness in your chest: | Yes | No |
| b. Pain or tightness in your chest during physical activity: | Yes | No |
| c. Pain or tightness in your chest that interferes with your job: | Yes | No |
| d. In the past two years, have you noticed your heart skipping or missing a beat: | Yes | No |
| e. Heartburn or indigestion that is not related to eating: | Yes | No |
| f. Any other symptoms that you think may be related to heart or circulation problems: | Yes | No |
7. Do you currently take medication for any of the following problems?
- | | | |
|--------------------------------|-----|----|
| a. Breathing or lung problems: | Yes | No |
| b. Heart trouble: | Yes | No |
| c. blood pressure: | Yes | No |
| d. Seizures (fits): | Yes | No |
8. If you've used a respirator, have you ever had any of the following problems? (if you've never used a respirator, check the following space and go to question 9 D.
- | | | |
|---|-----|----|
| a. Eye irritation: | Yes | No |
| b. Skin allergies or rashes: | Yes | No |
| c. Anxiety: | Yes | No |
| d. General weakness or fatigue: | Yes | No |
| e. Any other problem that interferes with your use of a respirator: | Yes | No |

OSHA Respirator Medical Evaluation Questionnaire (Continued)

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes No

Questions 10 to 15 below must be *answered by every employee* who has been selected to use either a full-facepiece respirator or a *self-contained breathing apparatus* (SCBA). For employees who have *been selected* to use other types of respirators, answering these *questions is* voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently) Yes No

11. Do you currently have any of the following vision problems? Yes No
a. Wear contact lenses: Yes No
b. Wear glasses: Yes No
c. Color blind: Yes No
d. Any other eye or vision problem: Yes No

12. Have you ever had an injury to your ears, including a broken eardrum: Yes No

13. Do you currently have any of the following hearing problems? Yes No
a. Difficulty hearing: Yes No
b. Wear a hearing aid: Yes No
c. Any other hearing or ear problem: Yes No

14. Have you ever had a back injury: Yes No

15. Do you currently have any of the following musculoskeletal problems? Yes No
a. Weakness in any of your arms, hands, legs, or feet: Yes No
b. Back pain: Yes No
c. Difficulty fully moving your arms and legs: Yes No
d. Pain or stiffness when you lean forward or backward at the waist: Yes No
e. Difficulty fully moving your head up or down: Yes No
f. Difficulty fully moving your head side to side: Yes No
g. Difficulty bending at your knees: Yes No
h. Difficulty squatting to the ground: Yes No
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs. Yes No
j. Any other muscle or skeletal problem that interferes with using a respirator: Yes No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes No

OSHA Respirator Medical Evaluation Questionnaire (Continued)

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes No

If "yes," name the chemicals if you know them: _____

3. Have you ever worked with any of the materials, or under any of the conditions listed below:

a. Asbestos	Yes	No
b. Silica (e.g., in sandblasting)	Yes	No
c. Tungsten/cobalt (e.g., grinding or welding this material):	Yes	No
d. Beryllium:	Yes	No
e. Aluminum:	Yes	No
f. Coal (for example, mining):	Yes	No
g. Iron:	Yes	No
h. Tin:	Yes	No
i. Dusty environments:	Yes	No
j. Any other hazardous exposures:	Yes	No

If "yes," describe these exposures: _____

4. List any second jobs or side businesses you have: _____

5. List your previous occupations: _____

6. List your current and previous hobbies: _____

7. Have you been in the military services? Yes No

If "yes," were you exposed to biological or chemical agents (either in training or combat):

Yes No

OSHA Respirator Medical Evaluation Questionnaire (Continued)

8. Have you ever worked on a HAZMAT team? Yes No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes No

If "yes," name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?

a. HEPA filters:	Yes	No
b. Canisters (for example, gas masks):	Yes	No
c. Cartridges:	Yes	No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you):

a. Escape only (no rescue):	Yes	No
b. Emergency rescue only:	Yes	No
c. Less than 5 hours per week:	Yes	No
d. Less than 2 hours per day:	Yes	No
e. 2 to 4 hours per day:	Yes	No
f. Over 4 hours per day:	Yes	No

12. During the period you are using the respirator(s), is your work effort:

a. *Light* (less than 200 kcal per hour): Yes No
 If "yes," how long does this period last during the average shift: hrs. _____ min.

Examples of a light work effort are *sitting* while writing, typing, drafting, or performing light assembly work; or *standing* while operating a drill press (1 - 3 lbs.) or controlling machines.

b. *Moderate* (200 to 350 kcal per hour):

If "Yes," how long does this period last during the average shift: hrs. _____ min.

Examples of moderate work effort are *sitting* while nailing or filing, *driving* a truck or bus in urban traffic; *standing* while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; *walking* on a level surface about 2 mph or down a 5-degree grade about 3 mph; or *pushing* a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

OSHA Respirator Medical Evaluation Questionnaire (Continued)

c. *Heavy* (above 350 kcal per hour): Yes No

If "yes," how long does this period last during the average shift: hrs. _____ min.

Examples of heavy work are *lifting* a heavy load (about 50 lbs.) from the floor to your waist or shoulder; *working* on a loading dock; *shoveling*; *standing* while bricklaying or chipping castings; *walking up* an 8-degree grade about 2 mph; *climbing* stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes No

If "yes," describe this protective clothing and/or equipment: _____

14. Will you be working under hot conditions (temperature exceeding 77° F): Yes No

15. Will you be working under humid conditions: Yes No

16. Describe the work you'll be doing while you're using your respirator(s): _____

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases): _____

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the second toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the third toxic substance: _____

OSHA Respirator Medical Evaluation Questionnaire (Continued)

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

The name of any other toxic substances that you'll be exposed to while using your respirator: _____

1. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

Information for Employees Using Respirators when Not Required

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can be a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substances does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Respirator Training Completion Form

FIT TEST PROTOCOL USED:

BUSINESS UNIT _____ LOCATION _____

FIT TEST CONDUCTED BY: _____ DATE _____

Qualitative _____ Quantitative _____

Initial only the appropriate blocks below to certify your training

NAME (print please)	SCBA	Airline Pressure Demand	PAPR	Air Purifying Full Face	Air Purifying Half Mask	OTHER
SIG.	Brand	Brand:	Brand:	Brand:	Brand:	Brand:
SSN# _____	Size: S M L XL	Size: S M L XL	Size: S M L XL	Size: S M L XL	Size: S M L XL	Size: S M L XL
I understand why respiratory protection is needed and where and when it should be used.						
I know how to use this respirator properly						
I know how to clean and inspect this respirator.						
I understand the limitations and restrictions of the respirators I will be using.						
I wore this respiratory equipment in normal air and checked the facepiece fit						
I wore this respiratory equipment in a test atmosphere generated by smoke or other means.						
I understand that a good gas-tight face seal cannot be achieved with obstruction such as facial hair or glasses (with full-face mask).						



Appendix I: Construction Management Safety Policy

Policy for Site Safety Programs in Connection with “Pure” Construction Management Assignments

Introduction

This section of Turner’s safety policy is intended to provide guidelines for a specific class of assignments that Turner may accept. Fundamentally, this section addresses projects on which Turner does **not** hold the Trade Contracts and is not performing actual onsite construction work with its own employees. In this section, we are referring to Projects on which Turner has **not** been engaged to perform the work itself, but has instead been engaged to provide “pure” construction management services. These guidelines are also applicable to projects on which Turner provides a) owner’s representative services, b) construction management consulting services or c) program or project management services.

Overall Goal

Turner’s core philosophy, that it only be involved in projects on which safe operations are conducted, will be Turner’s goal for this class of projects as well. The policy guidelines herein are to be implemented when Turner performs on projects of the type described in the introduction to this section.

Specific Goals

1. To ensure that there is a clear and appropriate assignment of responsibility for Project Safety in connection with the particular project, whether it is by assignment to Turner, a consultant engaged by the Owner or by a contractor to the Owner. Remember, Turner should not accept assignment of service that it would not have the contractual authority to control and/or responsibly perform.
2. To ensure that the assignment of responsibility for safety related matters is clearly reflected in language included in Turner’s Contract as well as each of the Trade Contractor’s Contracts, including appropriate lines of communication. Whatever obligations Turner may have, if any, should be presented as defined tasks, and not an assumption of responsibility. Remember, as a pure construction manager, Turner’s role is in providing specific services for the Owner, not to act as a general contractor.
3. To ensure, at a minimum, that the conditions on the Project are maintained in a safe manner to allow for a safe working environment for the Turner personnel assigned to that Project. The safety of Turner’s personnel assigned to that Project would be viewed as a minimum standard, to be employed in situations in which an Owner has not engaged Turner to perform a broader safety role. Further, in conducting safety



assessments from the stand point of Turner's personnel, it is recognized that such safety reviews will potentially identify deficiencies in the work performed by others, and these guidelines are intended to provide a program by which such deficiencies of the trade contractors are to be communicated.

4. To ensure that Turner properly fulfills the obligations that it has accepted in its contracts, which may be broader than addressing the safety of Turner personnel. By way of example, many CM contracts require Turner to inform the Owner when a Trade Contractor is not fulfilling its obligations under its trade contract with the Owner which would include any required safety responsibilities of the Trade Contractor.

Understanding the Source of Turner's Safety Obligations

There is a significant distinction between the operations of site safety programs in connection with Pure Construction Management Projects as distinguished from other assignments that Turner may accept. On Projects in which Turner (i) actually performs work through subcontractors under Contract to Turner, or (ii) has a work force on the Project, there may be little question as to Turner's responsibility with respect to providing the appropriate site safety assessments (other sections of the safety and health manual should be referenced for Turner's policy in this regard). However, unlike these other forms of agreement, the specific site safety obligations of Turner on Pure CM Projects, is often dictated by the specific obligations that Turner has accepted in connection with that particular Project. Those specific obligations are often unique to the particular assignment that Turner has accepted, and those obligations should be defined and established in the Contract between Turner and the client that engaged Turner to provide those services. Accordingly, the Business Development representative, or other person assigned to develop the contract between Turner and the Owner, should be familiar with these guidelines. An understanding of the obligations of Turner in this regard should be discussed with the project staff at the 1A meeting (internally) to ensure their full understanding of the contractual responsibilities.

The specific role of Turner, as defined in the contract, will likely operate in one of three general categories, which will be discussed below. This section of the policy will also provide guidelines for the particular onsite safety program that Turner is to utilize in each of those three separate different programs.

The Terms of the "Pure Construction Management" Agreement

As a General Contractor, Turner's responsibilities for safety are not necessarily derivative of specific language in the Construction Contract. On Pure Construction Management Projects, which these guidelines are addressing, Turner's specific responsibilities are established by the tasks and services assigned to the Pure Construction Manager under that agreement. Therefore, it is essential that Turner personnel ensure that there is no question, and that there is no lack of clarity, as to the responsibilities of Turner with respect to the safety issues in connection with that particular project. The contract should clearly define these obligations.

Three General Contract Scenarios as they Relate to Safety on Pure CM Projects

The terms of the relevant Construction Management Agreement will likely result in Turner's responsibilities being viewed in one of three general approaches. They are as follows:



- Scenario 1. A Project in which Turner has accepted obligations to perform site safety in connection with the Project;**
- Scenario 2. A Project in which the Owner has engaged an outside consultant to perform site safety obligations; or**
- Scenario 3. A Project in which the Owner has utilized neither approach 1 or 2.**

The Policy for each Scenario

This section of the guidelines will proceed to address the general issues with respect to development of Turner's Contract that should be considered with respect to each of these three separate scenarios.

Scenario 1- This is the scenario in which Turner has accepted the obligation to perform site safety services in connection with the Project, including Project safety inspections and reporting. It is important to recognize that in connection with Pure Construction Management Projects, in accepting the responsibility to perform site safety services for an Owner, there is a key distinction. Turner may be accepting responsibility to provide site safety inspections and reporting, however that is different from accepting broad responsibility for safety in connection with the Project. As a pure CM, Turner's role must be limited to site safety inspections and reporting functions. Turner cannot accept responsibility for supervision of the various Trade Contractors and their employees, since the contractors are hired directly by the owner. Except in the rarest of instances, the responsibility to supervise or direct a specific construction worker will remain with the particular Trade Contractor. The responsibility to direct a Trade Contractor will remain with the Owner. It is very much unusual, if not unheard of, for the pure construction manager to have an obligation that extends so far as to supervise the workers on site. As a result, Turner can only accept the obligation to perform certain specific tasks and functions that are limited to conducting site safety inspections, monitoring, reporting, or other similar tasks. These tasks are separate and distinct from simply accepting responsibility to actually implement Project safety measures. The implementation of the safety measures must remain with the Trade Contractors, as they are the only participants in the project that have a workforce present.

An example of the distinction is as follows: Assume that a particular Trade Contractor is not installing temporary barricades as may be appropriate. Since Turner does not have a work force on site, as Turner is in a pure CM role, Turner cannot install the temporary barricades. The only construction workers on the Project that may do so are those that are employed by the particular Trade Contractor. Additionally, Turner will likely not have the authority under its contract with the Owner to expend the Owner's money and/or to direct the employees of the particular Trade Contractor to install the particular barricades. This is not to say that Turner would have no means available to it to seek and pursue redress of the circumstance. However, it must be recognized that Turner's means of seeking and pursuing redress is often limited to reporting the matter to the Owner, and, if the Contract so provides, to simultaneously provide informational notice directly to the responsible Trade Contractor. Only if the Contract so permits may Turner provide a directive to the particular Trade Contractor to correct the situation.



It is critical to understand this distinction and Turner's role for four key reasons:

1. Turner can only accept certain safety tasks, as opposed to accepting responsibility for safety. The former is accepting the obligation to perform a professional service, while the latter is one of taking the risk and responsibility without regard to whether Turner has the authority or ability to take necessary action. The latter is unworkable.
2. It is important that Turner not create a circumstance in which Turner acts beyond the authority granted to Turner under the relevant Contract. If the Owner has not empowered Turner to issue directions to the Trade Contractor, Turner cannot do so. If Turner is empowered by the Contract with the Owner to issue directions to the Trade Contractor, such directions should be limited to the scope of empowerment contained in the Contract and the Owner should always be provided a copy of such directions.
3. The other participants must be obligated by the Owner to follow and implement the safety related programs and procedures that are required by their Trade Contract and to address safety related deficiencies or non-compliance.

As stated, Turner does not have a workforce on the project, so it is essential that those in a position to take necessary or proposed action be obligated to do so.

4. Turner should not dictate the means and methods by which a Trade Contractor safely performs its work. In no event should Turner be directing the work of an individual tradesperson. Any communications with a Trade Contractor regarding a safety issue should involve that particular Trade Contractor's management personnel (which may include its foreman, project manager, etc.).

As stated above, Turner Business Development has a vital role in incorporating clear language in the Contract defining Turner's role in providing the site safety services in connection with the Project. That language should address the fundamental issues of defining:

- 1) Those services or tasks Turner is to perform,
- 2) Turner's authority in issuing informational directions or instructions to a contractor (and any limitations regarding same),
- 3) Confirming that Turner is not a controlling employer,
- 4) Ensuring that the Owner agrees to contractually require the other participant(s) in the project to take action consistent with the Project Safety Policy, Turner's internal policies and as necessary to ensure a safe project.

This will typically include requiring that an Owner obligate its Trade Contractors to:

- 1) Provide own specific Trade Contractor's Safety Program. Such program shall at a minimum incorporate the safety requirements outlined in the contract documents. The Trade Contractor's Safety Program shall address in detail the specific means, methods and circumstances of its work.



- 2) Immediately correct and address every safety issue or non-compliance that may be identified either directly by the Owner, by the Owner through Turner, or by Turner as it relates to non-compliance with a contractual obligation or safety of Turner personnel.
- 3) To follow any safety related directives that may be issued during the course of the project either directly by the Owner, by the Owner through Turner or by Turner to the extent the Owner has expressly retained Turner for such service.

In scenario 1, Turner is being engaged to provide site safety services. **Exhibit A** is a sample list of the specific services that Turner may be providing in scenario 1 (Sample List of Safety Services). Those specific services that are selected by the Owner should be included in the Contract, typically as an exhibit. Turner's role should be limited to those the performance of those services selected and included in the Contract exhibit. As a result, there will be no question as to Turner's role and function with respect to Project safety. Note that these services are defined tasks. As stated above, there should not be a broad assumption of responsibilities; only acceptance of the obligation to perform this specific and limited safety related tasks. It is equally important to clearly set forth, both in Turner's Contract and that of the Trade Contractors, the procedures and timing regarding the communication of the services provided and the authority regarding such communications. At a minimum, the Owner should be included concurrently in all communications involving the performance of these services.

In implementing Turner's obligations in Scenario 1, it will often be required that Turner prepares a draft site safety program for the Owner to review/approve and implement in connection with the project. **Exhibit B** is

a sample program that could serve as a template for developing such a program. Naturally, the program

provided in this attachment should be reviewed and modified to address the particular needs of the proposed project. Please note that such a site safety program will be the Project Safety Program and should not be referred to as "Turner's Project Safety Program".

Scenario 2 – Scenario 2 is a situation in which, instead of the Owner engaging Turner to provide a site safety function, the Owner has agreed to engage an outside consultant (hired directly by the Owner), to address site safety issues in connection with the Project. In this situation, Turner would look for specific language to be included in the Agreement whereby it is acknowledged that the Owner has engaged a separate consultant for the purpose of conducting site safety assessments and reporting in connection with the Project, and that this responsibility and obligation has not been assumed by Turner as it is being performed by others.

It is recommended that when Turner operates on a Project on which the Owner has engaged a separate consultant, that there be a clear understanding, preferably expressed in the Contract, identifying how the Owner wishes to communicate and address the issues presented by the Owner's safety consultant. For example, assume that the safety consultant has discovered a situation in which temporary barricades are not installed. What then is to occur? Is the site safety consultant to distribute its reports to the Trade Contractors? Is the Owner to distribute that report? Is the Owner to issue directives with respect to addressing those issues? Is Turner to issue that directive (and if so, does Turner have the contractual



authority to do so)? These questions should be clarified and defined in the Agreement between Turner and the Owner.

There should be clear language in Turner's Contract with the Owner and the Trade Contracts acknowledging that Turner has not assumed any role in connection with site safety, as others have assumed this function. That language should further acknowledge that Turner is neither the controlling employer on the Project, nor has Turner assumed any role supervising the work of the Trade Contractors or their personnel. Nevertheless, in circumstances in which the Owner has engaged an outside site safety consultant, Turner's policy is one of Turner exercising the limited role of conducting inspections to assess the safety of Turner personnel assigned to that Project. Therefore, language should be included to allow Turner to communicate any safety concerns for its employees directly to the outside safety consultant for appropriate action by the consultant. The procedures to be followed by Turner in connection with Scenario 2 are provided in **Exhibit C** (Scenarios 2 and 3 - Guidelines for Site Walkthroughs and Reporting).

Should Turner conclude that the outside consultant engaged by the Owner is not performing its services in a manner that Turner views as adequate from the stand point of safety of Turner personnel, Turner may request more frequent inspections of the Project site by the Business Unit Safety Director. Turner's policy will be for the Project personnel to contact the Business Unit's Operations Manager for appropriate review of the relevant Contract terms so as to appropriately address any concerns with the Owner and the General Manager. Additionally, attached hereto as **Exhibit B**, is a safety program that Turner recommends as a minimum standard for inclusion and implementation in the contract that the Owner will utilize with respect to its outside consultant and the Trade Contractors. It is recommended that whenever possible these criteria be provided to the Owner for the purpose of helping assure that no less than these criteria are utilized by the Owner in its engagement of the outside safety consultant and the Trade Contractors.

Scenario 3 – As mentioned above, Scenario 3 is the circumstance in which the Owner has not engaged Turner to perform a broad safety inspection, nor has the Owner engaged an outside Safety Consultant to do so.

The key point to recognize in Scenarios 1 and 2 is that there is specific language in the Contract defining whom it is that will be providing the Site Safety Function in connection with the Project. Despite the best intentions, Owners may not be willing to accept specific language defining who it may be that has that

particular responsibility. Accordingly, Scenario 3 is intended to address the circumstance in which there is no such specific designation of responsibility.

In such circumstances, the policy of Turner is to assure that the Contract includes language acknowledging the fact that Turner has not assumed such responsibility. In this context, Turner's policy is one of assuring that its contracts include specific language whereby the Owner acknowledges that Turner has not been engaged to perform any site safety monitoring, inspections, or other safety functions or oversight services in connection with the project. That language should specifically acknowledge that Turner does not have any role or responsibility with respect to the supervision of the Trade Contractor's work on the project, or the



supervision of the personnel employed by the Trade Contractors. Business Development is to ensure this language is included prior to signing a contract.

Turner's policy remains, however, one of assuring the safety of Turner's personnel assigned to that project. Additionally, it is recognized that incidental to Turner's performance of the Project Safety Monitoring for the safety of Turner's personnel, Turner's Safety Managers may discover deficiencies in the Trade Contractor's safety performance. The policy of Turner as to how best to address such deficiencies that may be discovered under this Scenario 3 is set forth in guidelines found in **Exhibit C** (Scenarios 2 and 3 - Guidelines for Site Walkthroughs and Reporting).

Other Scenarios and Concerns

One of the greatest issues involved in any safety program where Turner is a pure Construction Manager is how it is implemented in the field by Turner's personnel. It is of the utmost importance that the Turner staff on a project knows and abides by the requirements of the Contract regarding safety services. Significant liability may be incurred by Turner simply because a staff person acts outside of the services defined by the Contract. Actions that are taken by Turner personnel that are outside of the defined services may be considered to be unauthorized and potentially negligent. The lines of communication are equally important and should be strictly adhered to. Turner should not dictate the means and methods by which a Trade Contractor safely performs its work. In no event should Turner be directing the work of an individual tradesperson. To the extent the Contract authorizes Turner to communicate with a Trade Contractor regarding a safety issue; all such communications should involve that particular Trade Contractor's management personnel (which may include its foreman, project manager, etc.). Furthermore, the Owner should be included in all communications regarding safety on a Project. Understand that your actions may have the effect of waiving language in a Contract that otherwise may have protected Turner from additional liability.

In developing this policy, it is recognized that Owners may object to Turner taking action in accordance with the policies outlined for each of three scenarios set forth above. Naturally, it would be unrealistic for these guidelines to anticipate all variations of objections that an Owner may have. As a result, should an Owner refuse or object to Turner's employment of the policies set forth in these guidelines, that matter should be brought to the attention of the General Manager (to be addressed internally as may be appropriate) who shall dictate the approach to addressing that particular objection. Additionally, the fact that a client has objected to Turner so doing should be communicated to the SVP level, and to the SVP of Pre-construction Management, to aid in the recognition of this type of objection on this and future projects. Also this information shall be provided to the Operations Manager, Manager of Business Development, Business Unit Safety Director, for consideration with respect to this and future contracts involving the particular clients. Should these issues arise prior to the execution of a Contract, these issues should be addressed in determining if Turner should accept an agreement or engagement with that particular client. It is recognized, however, that objections by clients may first arise after the contract is executed, and accordingly, appropriate assessment should take place to assure Turner's actions are consistent with Turner's contractual obligation with the Owner to the extent possible.



CM Policy

Exhibits



Exhibit A

Scenario 1 – Turner Providing Safety Services Sample List of Safety Services

It must specifically state in the contract that although Turner has contracted to complete certain Safety functions, Turner is not assuming the role of the Controlling Contractor or a General Supervisory Role with respect to the Trade Contractors on the project.

The following list is not all-inclusive.

- ❑ Monthly Safety Walkthrough
- ❑ Project Staff Weekly Walkthrough
- ❑ Coordination of a Monthly or Weekly Safety Meeting
- ❑ Collection and Tracking of Weekly Contractor Toolbox Talks
- ❑ Providing Weekly Toolbox Talk Topics
- ❑ Coordination of Safety Pre-planning Meetings on an As Needed Basis
- ❑ Coordination of Daily Site Safety Efforts
- ❑ Development of an Owner Site Safety Program
- ❑ Development of Site Emergency /Evacuation Procedures
- ❑ Notification of Safety Deficiencies to Contractors following Inspections
- ❑ Coordination of Periodic OSHA Inspections
- ❑ Coordination of Periodic Insurance Carrier Inspections
- ❑ Coordination of Periodic Local Emergency Service Tours
- ❑ Development of an Incentive Program
- ❑ Coordination of Periodic Project Tours
- ❑ Development of Pedestrian Safety Policy
- ❑ Coordination of Site Contractor Safety Efforts
- ❑ Tracking of Incidents and Follow-up Correspondence



Exhibit B

Scenario 1 – Turner providing Safety Services Sample Safety Program

Note: This is a sample Safety Program that is to be modified as appropriate for each specific project. The Business Unit Safety Director should be consulted to make this format specific to the project and add additional requirements as deemed necessary.

This sample, although developed for use when Turner has accepted certain safety related obligations, can be used as a reference in assessing the completeness of a program proposed by either a contractor or a safety consultant engaged by the Owner. This program sets forth the minimum acceptable standards for the Trade Contractor's Safety Program. It shall be the Trade Contractor's responsibility to develop and implement a written Safety Program, which addresses in detail the specific means, methods and circumstances of its work.

This Sample Safety Program, although drafted by Turner, should be reviewed/approved/modified by the Owner and implemented by the Owner for the Project as the Project Safety Program.

SAFETY IS EVERYONE'S CONCERN

The **[Owner/Project Name]** intends to adopt a proper and positive Incident Prevention Program requiring contractor, their subcontractors and suppliers to comply with the safety rules and regulations set forth in this Program.

This Safety Program, along with any additions or modifications that may become necessary during the life of the project, should assist in keeping incidents to a minimum throughout the construction process. This Program is to be used in conjunction with the Trade Contractor's own program.

All Trade Contractors and their employees engaged in work on this project must comply with all federal, state and local safety codes and regulations along with the recommendations of the **[Designated Safety Over-site Group]**. The Designated Safety Over-site Group shall consist of _____. [Fill in who is required by Contract to provide safety over site – i.e. the Owner, the Owner's safety Professional, Turner, etc.

We must realize that incident prevention is mandatory, beneficial to all, and the responsibility of every individual on this project, whether management, field staff, or any other position.

You, as an employer, have a responsibility to provide a safe and healthful work place for your employees, as well as others, in order to keep incidents to a minimum. **[Owner]** requests that you give your full support and cooperation to the Project Safety Program throughout the construction process.



RISK AND SAFETY MANAGEMENT

This safety program embodies the prevention of incidental injury, property damage, fire damage and hazardous product occupational illnesses. There is no feature of our work that is of greater importance.

[Owner] recognizes that the prevention of incidents is imperative and it is our policy to provide a safe workplace. All Trade Contractors employed on the job are expected to conduct their work in a safe manner. Each Trade Contractor has a contractual obligation to perform their work using safe methods in order to eliminate injury to employees, the public and damage to property.

Congress has recognized the importance of incident prevention by enacting the Occupational Safety and Health Act of 1971. It is the responsibility of all employers to comply with these and any like regulations that may be imposed now or in the future.

PLANNING

The establishment of a pre-job safety-planning program for safety and hazard communication effectively prevents incidents. Awareness of potential loss-producing sources becomes a factor in the selection of work methods and equipment. This program will include, but not be limited to, the following essential steps:

1. Fact Finding -- Collect basic job information: methods, equipment, location, etc.
2. Analysis and Evaluation -- Spot potential sources of loss and determine priorities.
3. Pre-planning Meeting -- Alert staff of potential sources of loss and develop plan to control them.
4. Follow Through -- Strive to carry out the plan successfully.

GENERAL SAFETY PROGRAM

Incident prevention is the responsibility of each employee - neglecting safety is neglecting job responsibilities. The purpose of the safety program is to prevent incidents, outline duties and responsibilities of all parties, and to emphasize a plan for safety education to promote the identification and elimination of hazards.

The principles outlined in this program should provide a foundation for a safe working environment. Strict adherence to the intent of this program is to be considered a contractual requirement. Failure to comply could result in the **{Owner}** withholding payments.

Responsibilities of All Project Employees

- Perform work to prevent incidents to themselves, fellow workers, general public, and property.
- Alert supervisors to dangerous situations.



- Cooperation with principles of the Safety Program and all OSHA Federal, State and Local Codes and Regulations and their company's Safety Program.
- Safe utilization of all tools and equipment.
- Attend weekly Tool Box talks.
- Alert foremen immediately of any incident.
- Stop work if imminent danger exists. Imminent danger is where there is an obvious and observable condition that will likely cause great bodily harm/death and/or significant property damage.

Responsibilities of Trade Contractor's Safety Representative

In the absence of an assigned employee, the contractor's lead person, foreman, or superintendent onsite will automatically assume the responsibility.

- Assist the **[Designated Safety Over-site Group]** in the recognition and correction of hazardous situations.
- Conduct Tool Box Meetings on a weekly basis.
- Issue minutes of the Weekly Tool Box Meeting to the **[Designated Safety Over-site Group]** each week.
- Effectively utilize and train your employees in preplanning, recognition and correction of hazards.
- Report all safety related matters to the **[Designated Safety Over-site Group]**.
- Shall be responsible for Trade Contractor incident reporting.
- Provide a competent person and OSHA 30 Hour trained supervisor/employer on site whenever work is being performed.
- Ensure that all employees are trained in proper fall protection and are utilizing 100% tie-off at 6 feet and above.

Basic Principles of the Safety Program for All Trade Contractors

1. All project employees shall comply with Federal, State and Local Codes and Regulations.
2. Plan all work to eliminate or minimize personal injury or damage to employees or the public.
3. All Trade Contractors shall submit their company's Project Safety Program to the **[Designated Safety-Over-site Group]** in writing prior to the start of their work. This program shall list the positive steps the contractor intends to utilize for the prevention of incidents to their employees, other contractors and the public. As a minimum, the Trade Contractor's safety program shall incorporate all the basic principles of the



[Owner's Name] Safety Program. The {Owner} reserves the right to withhold monthly progress payments if this requirement is not adhered to.

4. Trade Contractors shall provide their workers with all safety and personal protective equipment and tools and enforce their use as required by the safety program, Federal, State and Local Codes and Regulations.
5. Have a scheduled inspection and maintenance program for all tools and equipment and submit logs to the **[Designated Safety Over-site Group]** upon request.
6. Each Trade Contractor, regardless of tier, shall have at least one qualified first aid person present on the job. The name of the qualified first aid person and date of certification shall be submitted to the **[Designated Safety Over-site Group]** at the beginning of the project.
7. Each job shanty shall be equipped with at least a 20 lb. ABC fire extinguisher in good working order with prominent signage leading to location and an OSHA recommended first aid kit and each trade Superintendent or Foreman shall have an OSHA manual. Shanties with phones shall have posted telephone numbers of the following: A list of doctors, hospitals, ambulance service, fire department and police department. If gang boxes are used in lieu of a shanty, the gang box shall contain an OSHA recommended first aid kit and OSHA manual, all to be furnished by the Trade Contractor.
8. Each Trade Contractor shall enforce the wearing of ANSI Z89.2-1971 approved hard hats and ANSI safety glasses during the total construction of this project and shall remove from project anyone from their forces not complying with this requirement.
9. All personnel shall wear shirts, long trousers and proper shoes at all times. No shorts, tennis shoes, tank tops, etc., will be permitted.
10. There are many safety factors involved with portable aluminum and other lightweight metal ladders. Metal ladders of any type and painted wooden ladders will not be permitted on this project. The only exception will be the metal ladders that are commonly used with steel erection. These ladders will only be allowed for work associated with the steel erection.
11. Each Trade Contractor is responsible for all of its subcontractor's and supplier's, regardless of tier, compliance with the Project Safety Program and all Federal, State and Local Codes and Regulations. Delivery personnel will not be allowed on the site without complying with these codes/regulations.
12. Any person not directly involved with the on-site construction of this project must not enter the site without first going to the **[Designated Safety Over-site Group]** job office and signing a visitor's release and obtaining a hard hat and safety glasses which is to be returned to the **[Designated Safety Over-site Group]** the same day.
13. Low velocity powder actuated tools only shall be permitted on this project. This is defined as that where the stud or pin has a velocity not in excess of 300 feet per second when measured 6-1/2 feet from the muzzle of the fastening tool. All operators



of any powder-actuated tool must carry a current certification from the manufacturer of the tool in use.

14. Alcoholic beverages or illegal drugs shall not be permitted on this project.
15. Walkman type radios with earphones shall not be permitted on this project.
16. Trade Contractors shall supply cool drinking water for their employees, per OSHA Regulation 1926.51(a).
17. No contractor shall permit his employees to use another contractor's scaffold without written permission from the owner of the scaffold. All scaffolds shall be checked daily and before each use for safety compliance. No scaffold shall be left at any time in an unsafe condition and shall be removed immediately if not to be used again. Daily inspection logs must be presented to the **[Designated Safety Over-site Group]** upon request.
18. All extension cords, cables and hoses shall be maintained at least 8 feet above the working floor. Where this is impossible, these items shall be inspected daily for damage and repaired immediately or tagged and removed from use until repaired. Flat cords are prohibited.
19. No material shall be stored within 6 feet of a floor opening or 10 feet of the perimeter of the building. For assistance with storage location, contact the **[Designated Safety Over-site Group]**.
20. All equipment, materials, and debris shall be secured at all times or removed immediately to grade level, until the building is enclosed, to prevent windblown objects.
21. If for any reason, a contractor must remove cable, barricades or any other safety related item in order to perform his work, it shall be the responsibility for that contractor to replace them when the work is completed. Failure to comply with this directive shall result in the **[Owner]** having this work performed by others at the applicable Trade Contractor's expense.
22. Each Trade Contractor shall be responsible for maintaining general housekeeping on a daily basis in their work area and all debris shall be placed in debris containers.
23. All excavations/caisson holes shall be barricaded with flagging whenever left for any period of time. Flagging/barricades shall be maintained. Excavation to conform to OSHA regulations.
24. All exposed rebar shall be capped.
25. Jobsite trailers/shanties having stairs to doorways shall have a landing platform at the doorway that extends more than 20" beyond the swing radius of the door. Ensure ADA compliance related to access.
26. Any perimeter work where there is a chance for falling objects, sparks, etc., will require flagging/barricades below with a flagman or other overhead protection.



27. Cranes on the jobsite will be required to have capacity/swing/boom data present at all times. Trade Contractors are required to flag off the area of the boom/counter weight swing radius and provide an anti-two blocking device on the cable. Prior to use, the Trade Contractor must provide the **[Designated Safety Over site Group]** with an annual crane certification made by a competent person. Cranes shall be periodically inspected with logs presented to the **[Designated Safety Over-site Group]** upon request.
28. Trade Contractors are provide coordination and confirmation of loading requirements prior to loading floors with materials to be assured of conforming to construction load maximums.
29. All work performed in or adjacent to public spaces will be required to have barricades furnished and installed by the Trade Contractor separating the public from the work. Warning signs shall be posted so as to inform the public of hazards. Flagmen are to be provided when necessary. All public areas are to be kept clean/clear of debris at all times.
30. For emergency purposes, each contractor shall submit a list to the **[Designated Safety Over-site Group]** of key personnel, with home addresses and telephone numbers.
31. All chemicals to be used on this Project that have been determined to be hazardous under the Federal Hazard Communications Standard, 1926.59 shall be labeled and accompanied by a Safety Data Sheet (SDS). The **[Designated Safety Over-site Group]** shall receive a copy of the SDS for these chemicals immediately upon their delivery to the Project. Hazard Communication is further addressed in this program.
32. OSHA Standards require that all sources of energy (electrical, mechanical, hydraulic, pneumatic, kinetic) be brought to a “zero energy state” before work is done on equipment. All contractors are to follow the new Lockout/Tagout Standard, 1926.417. Trade Contractors are responsible for training their employees. Trade Contractors are responsible to notify other contractors performing work in the area of any lockout/tagout or to procedures to be followed and provide **[Designated Safety Over-site Group]** with copies of such notifications.
33. Trade Contractors shall provide copies of all incident reports to the **[Designated Safety Over-site Group]** within 24 hours of the incident.
34. All trenching and excavation work shall comply with OSHA standard 29 CFR part 1926.650. Contractors who may expose their employees to the hazards of trenches or excavations shall provide a competent person by OSHA definition to inspect these areas to ensure compliance with the standards.
35. The competent person will be on site whenever any work is being performed in trenches over 5'0”.
36. Ground fault circuit interrupters (GFCIs) will be provided on all temporary electrical receptacles by the electrical contractor. The electrical contractor will inspect all ground fault circuit interrupters on a monthly basis. Damaged equipment shall be replaced.



All electrical equipment and extension cords not protected by GFCIs shall be tested and color-coded in accordance with the OSHA Assured Grounding Program. Flat extension cords are not permitted on this project. All cords, tools, and equipment shall be inspected daily for damage and removed from service if damaged.

37. Proper sanitation facilities will be provided. Any person not using proper facilities will be immediately and permanently removed from the site. Hand washing facilities will be made available to all workers per OSHA 1926.
38. Any floor opening greater than 2" in diameter, but not larger than four square feet (4 SF) may be protected by a cleated plywood cover a minimum of 5/8" thickness or other equivalent means. The cover shall be clearly labeled "Floor Opening Do Not Remove." Protection must be secured from horizontal or vertical movement. Each Trade Contractor will be assigned a "color code" for their covers easily identified as belonging to that Trade Contractor.
39. Floor and roof openings larger than four square feet (4 SF) shall be protected by the contractor that created the opening, and the protection maintained until such a time that his forces are no longer on site. Contractors creating a floor or roof opening larger than four square feet (4 SF) shall be protected by the contractor that created that opening. This does not include protection during steel erection. Openings larger than four square feet shall be covered by one of the following methods:
 - a) Guardrails and toe boards which meet OSHA requirements.
 - b) A minimum 2" x 10" planking (nominal) completely covering the opening and extending a minimum of 6" beyond all sides, with additional support to be installed at spans over six feet (6') and secured from horizontal or vertical movement.
 - c) Other methods which meet OSHA requirements.
40. It is understood that once a contractor begins his work directly above, below, or within eighteen inches (18") of a floor or perimeter opening, that contractor is to maintain the protection of that opening.
41. In renovation and/or alteration work, identification of unmarked pipes must be made prior to any demolition or work being performed.
42. All persons shall be protected from falls at a height of six feet via netting, guardrails, or personal fall arrest systems. All work and trades are included in this requirement. Any employee found not protected will be removed from the site. Any contractor found non-compliant three times will have their supervisor removed and replaced.



Safety Meetings

Safety will be a regular discussion item at the Weekly Contractor Coordination Meeting. All Trade Contractors shall have a representative present at this meeting.

Agenda for the safety portion of the meeting will be causes and corrections of incidents that have occurred since the last meeting, existing hazards in need of immediate correction, potential hazards involved in the work expected in the next two weeks, and methods of eliminating or protecting against them, and conditions and/or actions that may affect the public and premises, including occupants and methods for handling them.

Weekly Tool Box Talks

Each contractor shall hold Weekly Tool Box Talks. The Trade Contractor's Safety Representative shall chair talks. Weekly Tool Box Talk Minutes shall be copied to the **[Designated Safety Over-site Group]** each Friday by 3:00 P.M. The **[Owner]** reserves the right to withhold Monthly Progress Payments if minutes are not submitted.

The weekly minutes shall contain the following:

- Name of contractor and date.
- Name of contractor's safety representative.
- Printed name and signature of all employees attending and the name of the first aid person.
- Number of employees on their payroll that day.
- Subjects discussed.
- Safety observations and comments from employees.
- Injuries the previous week.
- Incidents or near misses the previous week.
- Scope of work for the week.

Just- in- time safety awareness training will be required when workers are not compliant with safety on the job.

Injury Reporting Requirements

If a contractor employee is injured:

- Each contractor shall make provisions for immediate and proper first aid and/or doctor treatment for every work injury of its employee. Injuries may be referred to the hospital emergency room.



- The **[Designated Safety Over-site Group]** is to be notified immediately of any incident.
- One copy of each incident report involving a contractor's employee shall be forwarded to the Owner and the **[Designated Safety Over-site Group]** within 24 hours.
- Trade Contractors will be individually responsible to notify Federal, State and Local authorities in the event of a fatality and/or multiple injuries requiring hospitalization (3 or more) within 8 hours of the time of the incident.

If a member of the public is injured:

- Immediately notify the **[Designated Safety Over-site Group]**.
- Send public liability report to your insurance carrier promptly and forward one copy of the report to the **[Designated Safety Over-site Group]**.

FIRE PREVENTION PROGRAM

Purpose

We are all aware of the dangers associated with fire and all employees have a vested interest in a fire prevention program. The following is a guide, in no way complete, setting forth, minimum standards to aid in preventing losses as a result of fires or gases associated with combustion.

The principles outlined in this program should provide a reasonable chance for a fire free job. Strict adherence to the intent of this program is to be considered a contractual requirement.

Shanties and Trailers

1. Shanties shall be constructed using only fire retardant materials and all glass shall be wired glass. As a minimum, any lumber used in shanty construction shall meet the American Wood Preserves Association's Standard C1, C20 and C27 and shall bear certificates of performance. Most local Fire Departments will not permit the use of flammable material for shanty construction, even before occupancy. Sprinklers may also be required. The Trade Contractor should be prepared to meet the Fire Department's requirements when constructing a field shanty.
2. All materials shall have a flame spread rating no greater than 25 (ASTM Standard E84) with no evidence of progressive combustion for at least 30 minutes.
3. All shanties shall be located at least 10 feet from materials that present extraordinary fire hazards.
4. Each shanty and gang box shall have at least one 20 lb. ABC fire extinguisher in good working order with prominent signage denoting location.
5. Rubbish shall not be permitted to accumulate within areas adjacent to any shanty.
6. No oily clothes, oily rags, or fuels shall be stored in shanties.
7. Shanties shall be constructed of flame retardant lumber.



8. Shanties shall be continually policed by their occupants to prevent accumulation of combustibles such as lunch wrappers and newspapers in and around their shanties.
9. Each shanty shall have a 55-gallon waste container adjacent to it.
10. Each shanty shall be heated with approved heating devices in accordance with applicable rules, regulations and laws. Electric space heaters must be monitored so as to insure that combustible materials are not placed near them creating the potential of fire.

Fire Prevention

1. All temporary electric must be in accordance with all existing codes.
2. Storage of any material within 10 feet of fire hydrants is strictly prohibited. All Fire Department Siamese connections/temporary standpipes must be kept clear at all times.
3. Work areas shall be policed on a regular basis to prevent accumulation of combustible materials.
4. No motors or machinery shall be left running unattended during non-working hours.
5. All heating equipment shall have necessary safety devices and shall be wired, piped and operated according to all applicable codes, rules and regulations. Ventilate as required to prevent carbon monoxide from accumulating.
6. All tarps and blankets shall be of fire retardant materials.
7. All fuel and solvent containers shall be placed on drip pans. All fuels and solvents will be stored per OSHA regulations.
8. No open burning or fires shall be permitted on site. Anyone doing so is subject to immediate dismissal.
9. No solid fuel (i.e., coke, etc.,) shall be permitted on the site.
10. Fire extinguishers shall be placed and maintained on the job in conspicuous locations. These fire extinguishers shall be not be moved or discharged except for fighting a fire. Anyone discharging an extinguisher as a prank will be subject to immediate dismissal and the applicable Trade Contractor will be held responsible for any damage or costs associated with this action.
11. Each Trade Contractor shall provide additional fire extinguishers when they are engaged in fire susceptible activities (i.e., welding and burning, heaters in use, tar kettles and paint storage).
12. Upon discharging of a fire extinguisher, notify the **[Designated Safety Over-site Group]** immediately so that proper steps can be performed to energize the extinguisher for future emergencies.



13. All gas bottles such as propane, oxygen and acetylene shall be stored and tied in a vertical position in areas designated by the **[Designated Safety Over-site Group]**. All stored bottles shall be capped. Propane shall not be stored indoors.
14. All gas bottles in use shall be tied in the vertical position and capped at the end of the working day.
15. All oxygen and acetylene in use shall be in proper carts with required separations.
16. During welding or cutting operations, a fire watch will be required and it shall be the responsibility of the contractor performing this work. Each welding cart must have an attached fire extinguisher. Non-asbestos blankets must be used to contain welding sparks. A thirty-minute post weld/cut fire watch is required.
17. All acetylene and fuel gas cylinders shall be separated from oxygen cylinders during storage by a minimum of 20 feet or by a non-combustible barrier of at least 5 feet high with a fire resistant rating of at least one half hour (ANSI Z49.1-1967).

Fire Fighting

Appropriate action is the key to the prevention of loss of life and property damage. This action in the first minute is worth tons of water 10 minutes later.

If a fire occurs, notify the local fire department (telephone number is posted at all phones) and the **[Designated Safety Over-site Group]**. Extinguish a small fire with non-combustibles such as sand or an available fire extinguisher.

Remove or shut off fuel supply if possible, such as removing debris or stored material or shutting off propane, etc.

Do not put yourself in danger trying to fight a fire for which you have not been trained. If evacuation is necessary, follow the emergency action plan set up on your project and meet outside building in designated area.

HAZARD COMMUNICATION PROGRAM

Purpose

The [Owner] has developed the Hazard Communication Program to be used on this project to insure that all of our employees are informed of the hazardous chemicals known to be present on the jobsite. All Trade Contractors, subcontractors, sub-subcontractors and suppliers shall comply with all Federal/State OSHA Hazard Communication Regulations CFR 1926.21 (3) and the Hazard Communication Final Rule dated August 24, 1987, CFR 1926.59 and CFR 1910.1200 if applicable. Each jobsite will have a copy of the Hazard Communication Standard on file.

Contractor's Responsibilities Are (But Are Not Limited To):

- Submit all Safety Data Sheets (SDSs) to the **[Designated Safety Over-site Group]** prior to use and bringing on site of the hazardous chemicals/materials.



- Must have all containers labeled with the OSHA required information for the container contents.
- Are fully responsible to train their own employees in their Hazard Communication Program.
- Keep own Hazard Communication records.
- Comply fully with the Federal/State Hazard Communication Program.
- Coordination between other trades

Safety Data Sheets (SDS)

Trade Contractors are to submit to the **[Designated Safety Over-site Group]** Safety Data Sheets (SDSs) for all hazardous chemicals/materials either going to be used or are being used on the jobsite. SDSs should be exchanged at the weekly Contractor Coordination meetings. The Trade Contractor is required to provide the **[Designated Safety Over-site Group]** with a SDS for any new material brought onto the site.

SDS Binder is required to be updated as new chemicals are introduced or at least one time per month. While all SDSs may not be uniform in appearance, they must convey the same message:

- Identification of the product.
- Known acute and chronic health effects and related health information (target organ effects).
- Exposure limits (Threshold Limit Value (TLV)).
- If the product is a suspected carcinogen.
- Personal protective equipment to be used.
- Emergency and First Aid procedures.
- Identification of the party responsible for the SDS.

Container Labeling

Trade Contractors will be monitored during delivery of their products to insure that all containers have OSHA required labels prior to being used. Mutilated labels shall be replaced with OSHA required labels. Unlabeled or mutilated labeled containers shall be removed from the jobsite if the labeling is not corrected within 72 hours from the delivery date. The contractor must label all secondary containers.

The Trade Contractor shall verify that all containers are clearly labeled as to contents; appropriate warnings noted; and names and addresses of manufacturers. Labels may be in writing, pictures, numerical systems or any combination of the aforementioned. The message must be understood as to the nature of the hazard, personal protective equipment needed, parts of the body affected, and emergency procedures.



Training of Contractor's Employees

Trade Contractors shall be responsible for the training for its employees as well and the employees of its subcontractors and vendors of all tiers. All training of new employees shall be performed prior to their starting work. The training should include the following:

- Overview of requirements of the Hazard Communication Standard and the location and general content of the Contractor's Hazard Communication Program.
- How to read and understand Safety Data Sheets (SDSs) and container/material labels. Where this information is located must be discussed.
- What hazardous materials they may be exposed to on the jobsite.
- What personal protective equipment must be used for various operations and how it will be used and maintained.

GROUND FAULT PROTECTION PROGRAM

Purpose

- To eliminate the hazards associated with electricity as it pertains to the use of power tools, cords, equipment, panels, etc.
- To outline the duties and responsibilities of all parties.
- To emphasize awareness and education of hazards associated with electricity and how to eliminate them thus preventing incidents.

Ground Fault Protection Program

The electrical contractor providing temporary electric services shall furnish and install 120V single phase 15 & 20 amp receptacles that have approved ground fault circuit interrupters for personnel protection complying with OSHA regulations part 1926.404 (b) (1) (ii) for all temporary electric.

The electrical contractor shall conduct monthly testing of all GFCIs and record as such. These records shall be made available for inspection by other contractors and the Owner.

All Trade Contractors are to verify that GFCIs are in proper working order prior to plugging into outlets. Any improper working devices are to be reported immediately to the **[Designated Safety Over-site Group]**.

The electrical contractor providing temporary electrical service is to respond immediately in the repair/replacement of improperly working devices.

The **[Owner]** does not accept an assured grounding program in lieu of GFCI usage, only in addition to.

Where permanent power is in use, a portable Ground Fault Circuit Interrupters will be used between the permanent power and the tool. The portable GFCI should be connected at the tool.



CONFINED SPACE PROGRAM

Purpose

The purpose of this section is to inform all contractors that work in these areas is critical and that proper procedures for confined spaces are to be followed.

Procedures/Responsibilities

The principle hazards in confined spaces are explosion, fire, and asphyxiation hazards. All contractors performing work in these areas are to follow confined space procedures as outlined by OSHA.

Trade Contractors shall be responsible for the training for its employees as well and the employees of its subcontractors and vendors of all tiers in the procedures pertaining to confined space work.

Trade Contractors are responsible for assuring that confined spaces are free of dangerous gases as indicated by an approved test device prior to entering the space. Tests are to be repeated at regular intervals to be assured that dangerous gases are not collecting in the confined space.

Trade Contractors are to provide proper ventilation as required for their employees during times when their employees are working in the confined space.

If space is identified to have explosive, fire or asphyxiation hazards over the OSHA action level or PEL a full permit required confined space program must be implemented.

EMERGENCY PROCEDURES

Emergency Telephone Numbers

Emergency telephone numbers will be distributed to all Trade Contractors at the first project meeting.

Severe Weather Policy

It is imperative to insure the safety of all employees that we have a designated meeting place and Action Plan to follow in case of severe weather. Every contractor's employee should be familiar with these procedures BEFORE severe weather actually occurs.

In the event of a tornado or severe weather requiring action, 3 blasts of a horn every 5 seconds will be sounded.

All personnel are to move to a protected area.

All personnel should evacuate the construction trailers.

Trade Contractor supervisors will be responsible for employee count to insure all personnel are present. So that everyone can be accounted for in these situations, always let your supervisor know when you are leaving your work area and where you are going.



Emergency Evacuation

If you feel there is a need to evacuate the building in the event of a serious fire, explosion, chemical spill, etc., ALERT MANAGEMENT IMMEDIATELY! Notify the **[Designated Safety Over-site Group]**, or any Supervisor available.

The evacuation signal will be a constant pulsating blast of a horn.

All personnel are to evacuate the building and proceed to the designated meeting place.

DO NOT PUSH, RUN OR PANIC.

Once evacuation of employees has been completed, no employee should attempt to re-enter the building until so instructed by the **[Designated Safety Over-site Group]**.

Trade Contractor supervisors are to be responsible for assuring all employees have been accounted for.

When working in existing facilities (hospitals, schools, plants) make sure you are familiar with the owners Emergency Action Plan and know how follow their plan.

SAFETY TRAINING FOR ALL CONTRACTORS

Purpose

- To inform all employees of the requirements of the Safety Program.
- To outline the safety duties and responsibilities of all parties on the project.
- To establish a mindset that puts safety as a foremost consideration in all aspects of the work.

Responsibility

It is the responsibility of each Trade Contractor to effectively train its employees, as well and the employees of its subcontractors and vendors of all tiers, in all aspects of safety and all points outlined in this program and federal, state, or local requirements.

FALL PROTECTION PROGRAM

All contractors must provide fall protection when working at heights of 6 feet or more.

Each contractor is responsible for protecting its own employees by using conventional means of fall protection such as standard guardrails or perimeter cable. The ongoing maintenance and daily inspection of this protection must also be included. If a contractor's employee cannot be protected by conventional methods, then adequate preplanning must be conducted to provide for anchorage points capable of withstanding 5000 lbs. and safety harnesses and shock absorbing lanyards for these employees. Perimeter protection is not designed to withstand 5000 lbs. but is designed for 200 lbs. Perimeter protection should not be used as an anchorage point unless it has been designed to withstand 5000 lbs.

All floor openings exceeding 2 inches in diameter shall be covered, barricaded, or otherwise properly protected. Covers shall be designed to withstand twice the weight of workers,



equipment, and materials. Covers shall be secured against displacement horizontally and vertically. All covers shall be marked with the words "Floor Opening" or "**DO NOT REMOVE**".

Each contractor employee exposed to fall hazards must be trained by the contractor in the recognition of fall hazards, the avoidance of fall hazards, the purpose, use, and requirements of conventional fall protection methods, and the use, inspection, and care of safety harnesses and shock absorbing lanyards.

Since contractors are experts at their specialized trades, they shall provide the **[Designated Safety Over-site Group]** with their own Fall Prevention Program which describes the methods that they intend to use to provide adequate fall protection for each contractor's specific operations. Contractors are expected to provide the **[Designated Safety Over-site Group]** with documentation that their employees have been adequately trained to comply with Subpart M, and the six foot rule.



The following is a list of several work areas where fall protection would be required and an example of a type of protection that may be used.

EXPOSURE	CONTROLS
Unprotected sides and edges 6 feet or more above a lower level	Guardrail systems, safety nets, personal fall arrest systems, scaffolds, ladders, or aerial lifts.
Leading edges 6 feet or more above a lower level	Guardrail systems, safety nets, personal fall arrest systems, controlled access zones, scaffolds, ladders, or aerial lifts.
Hoist areas	If protection must be removed for a worker to reach out to receive the load then a personal fall arrest system shall be used.
Excavations exceeding 6 feet in depth	Guardrail systems, fences, or barricades.
Overhand brick laying	Guardrail systems, scaffolding, or personal fall arrest systems.
Roofing work on low-slope roofs	Guardrail systems, safety nets, personal fall arrest systems or warning line system.
Steep roofs	Guardrail systems with toe boards, safety net systems, or personal fall arrest systems.
Pre-cast concrete erection	Guardrail systems, safety net systems, or personal fall arrest systems.
Wall openings where the inside bottom edge is less than 39 inches from the inside walking/working surface.	Guardrail systems, safety net systems, or personal fall arrest systems.



Fall Protection Systems

Guardrail system consists of a top rail at approximately 42 inches, midrail approximately at 21 inches, and a toe board approximately 4 inches in height. If wire rope is used for top rails and midrails, its diameter must be 3/8 or 1/2 ". Wire rope must be flagged not less than every six feet.

Safety net system shall be installed as close to the walking/working surface as possible, but no more than 30 feet below such level. Safety nets shall be so installed with sufficient clearance underneath to prevent contact with the surface or structures.

Personal fall arrest system consists of a safety harness, lanyard with locking snap hooks, and an anchorage point capable of supporting at least 5000 pounds. A variety of other components can make up this system such as retractable lifelines, rope grabs, horizontal life lines, vertical life lines, shock absorbing lanyards, and a variety of anchor points such as belts, clips, prefabricated holes in steel, and chokers.

Warning line system is used mainly for the protection of roof edges. The warning line must be erected on all sides of the roof work area and not less than 6 feet from the roof edge.

CONCLUSION

All Trade Contractors are responsible for instructing their employees, as well and the employees of its subcontractors and vendors of all tiers, in the recognition and correction of unsafe conditions and the regulations applicable to their work environment to control or eliminate any hazards or other exposures to illness or injury.

Good safety practices carried out on this project will reduce possible incidents, which in turn will result in fewer dollars lost by the employers.

Neglecting safety is neglecting job responsibilities.

Please make it a point to implement the necessary procedures to assure a safe working environment for all employees on this job. Your cooperation is greatly appreciated.

When you have read the enclosed Safety Program, detach the following page and return it signed to the **[Designated Safety Over-site Group]**.

As is required, please enclose a written copy of your company's safety program that you intend to enforce in the performance of your work on this project.



TO: [Owner]

We have read and will abide by and comply with the Project Safety Program for the [Owner Name] projects. We will immediately correct any safety violations, including those noted by the [Designated Safety Over-site Group], during the course of our work on this project. We realize that it is our obligation as an employer to provide a safe and healthful workplace.

A copy of our safety program is enclosed. Our program complies with all Federal, State and Local Codes and Regulations and incorporates the [Owner's] Safety Program as minimum requirements. A copy of our Safety Program shall be made available for and discussed with all of our project employees.

Name of Company

Scope of Work

Project Manager

Date

Superintendent/Foreman in Charge
of Work

Date

Competent Person on Site

Date

First Aid/CPR Trained Employee

Date

30 Hour OSHA Certified Supervisor

Date

TRAINING CERTIFICATION SHEET

This certifies that I have been presented/read this Safety Program and understand all aspects outlined herein.

Company Name

Name
(please print)

Signature

Date

[illegible]



Exhibit C
Scenarios 2 and 3
Guidelines for Site Walkthroughs and Reporting

Guidelines for Project Staff and Safety Directors on Scenario 2 and 3 contracts whereby the Owner has hired an outside Safety Consultant to address site safety responsibilities, or the contract is one in which Turner has not accepted safety obligations.

1. Safety Directors shall visit the project once a month to conduct a safety walkthrough for the purpose of assessing and reporting to the Owner, or its representative, safety issues from the perspective of the safety of the Turner personnel assigned to the project. Although the walkthrough is intended to assess the safety of Turner personnel, if, during such a walkthrough, the Safety Director observes other potential safety risks (beyond the safety of Turner personnel), the Safety Director will note that deficiency in its report as well for the limited purpose of informing the Owner, or its representative, of such potential deficiency and for the Owner's action in addressing same. Safety Directors shall prepare a report of the walkthrough using the guidelines described in this Exhibit.
2. Should the Safety Director, following the walkthrough, conclude that an unusual risk of safety to Turner personnel exists on the project; the Safety Director may require that a member of the Turner project staff conduct walkthroughs with a frequency that the Safety Director may deem appropriate. A member of Turner's project staff shall conduct project safety walkthroughs as the Safety Director may require, for the purpose of assessing and reporting to the Owner, or its representative, safety issues from the perspective of the safety of the Turner personnel assigned to the project. If, during such a walkthrough, the Turner staff member observes other potential safety risks (beyond the safety of Turner personnel), the staff member will note that deficiency in its report as well for the limited purpose of informing the Owner, or its representative, of such potential deficiency and for the Owner's action in addressing same. Turner staff members shall, as the Safety Director may specify, prepare a report of the walkthrough and such report shall be prepared using the guidelines described in this Exhibit.
3. At the time that the Safety Director provides their first report, Turner project personnel should discuss with the Owner whether the Owner would prefer that Turner provide a copy of the report to the Trade Contractors and/or Owner's safety consultant on the Owner's behalf, or whether the Owner would prefer to distribute the report themselves. Most often the Owner will choose the former. Whatever procedure results from that discussion with the Owner should be confirmed in writing. Turner should proceed to distribute the report consistent with the Owner's guidance. Of course, if the contract already addresses this question, the contract should be followed. Any such correspondence to a Trade Contractor should clearly state that it is being sent on the Owner's behalf.



When the Safety Director or staff member generates a report following a walkthrough under paragraphs 1 or 2 above, the following formats shall be utilized to communicate the report to the Owner and/or Trade Contractors, as may be applicable, follow:

To: Owner
From: Turner Rep
Re: (Project Name), Safety Walkthrough, (Date)

Turner recently conducted a walkthrough of the project for the limited purpose of assessing the conditions at the project site as they affect the safety of the Turner personnel assigned to this project. Since Turner's role in connection with this project does not include project safety oversight, obligations, management or reporting, our walkthrough was focused only on the safety of the assigned Turner personnel. This report presents Turner's findings in that limited context. Turner has not attempted to report on, assess or review the safety of the operations of the various trade contractors beyond this limited context, although this report may include any such issues that were noted. We bring this report to your attention to assure that the Turner personnel are not exposed to danger because of any unsafe operation or condition.

We noted certain safety related issues that warrant attention. Enclosed you will find a copy of that report.

Two options based on whatever agreement was reached with the Owner regarding who will distribute the report to the contractors, either - Per our discussion, we understand that you will forward this report to the relevant contractors and demand that corrective action be taken immediately. ***Or*** - Per our discussion, we will forward a copy of this report to the relevant contractors and convey your demand that corrective action be taken immediately.

We strongly urge that corrective action proceed at once. Please note that Turner's role on this project does not extend to safety related issues or assessments, and recognize the limited purpose of the walkthrough that is described at the beginning of the report. As stated, we assume that you would be interested in the contents of this report and that you will agree that it makes sense to address the issues reported. Our sharing this report with you should not be misinterpreted as Turner accepting or assuming your responsibilities or obligations with respect to safety related matters.



To: Contractor
From: Turner Rep
Re: (Project Name), Safety Walkthrough, (Date)

Turner recently conducted a walkthrough of the project for the limited purpose of assessing the conditions at the project site as they affect the safety of the Turner personnel assigned to this project. Since Turner's role in connection with this project does not include project safety oversight, obligations, management or reporting, our walkthrough was focused only on the safety of the assigned Turner personnel. This report presents Turner's findings in that limited context. Turner has not attempted to report on, assess or review the safety of the operations of the various trade contractors beyond this limited context, although this report may include any such issues that were noted. We bring this report to your attention to assure that the Turner personnel are not exposed to danger because of any unsafe operation or condition.

We are providing a copy of this report to you at the request of the Owner, and the Owner has advised us to demand, on their behalf, that these safety issues be addressed immediately.

We strongly urge that corrective action proceed at once. Please note that Turner's role on this project does not extend to safety related issues or assessments, and recognize the limited purpose of the walkthrough that is described at the beginning of the report. As stated, we assume that you would be interested in the contents of this report and that you will agree that it makes sense to address the issues reported. Our sharing this report with you should not be misinterpreted as Turner accepting or assuming your responsibilities or obligations with respect to safety related matters.

4. Imminent danger situation

If during the course of a walkthrough, the Safety Director or a staff member notices an imminent danger, immediate notification to the Owner and management of the Trade Contractor shall be made in order to correct the situation. The walkthrough report shall document that this has taken place. Imminent danger is where there is an obvious and observable condition that will likely cause great bodily harm/death and/or significant property damage.

5. Turner staff shall follow Turner safety and health rules in the course of the project with respect to the performance of their obligations.

Purpose

To prevent heat illness and provide a safe and healthful working environment for all employees that may be exposed to temperature extremes, radiant heat, humidity, or limited air movement.

Heat Illness occurs when the body's means of controlling its internal temperature starts to fail. The body cools itself by blood flow to the skin's surface and by sweating. The sweat evaporates from the body which results in a cooling effect. Remember, that excessive sweating can lead to dehydration, therefore drink plenty of water (one cup every 15-20 minutes). Do not wait until you are thirsty.

Factors such as air temperature, work rate, humidity, clothing worn, age, weight, personal fitness, medical conditions (diabetes, heart condition, etc.), medications (water pills, blood pressure, heart condition, allergies, etc.), caffeine, and alcohol may contribute to heat illness. Clothing, Personal Protective Equipment (PPE), and humidity can restrict sweat evaporation and not allow the body to cool. The body continues to produce heat but is not able to release the heat so the body temperature rises. Eventually the body's control mechanism starts to fail. When this occurs symptoms of heat illness start to appear.

California Code of Regulation, Title 8, Section 3395 Heat Illness Prevention

States (in part):

- The measures required within this section may be incorporated into the employers IIPP (CCR section 3203) or may be a stand-alone document.
- Timely access to shade is required below 80 degrees when requested. Shade is required to be present when the temperature exceeds 80 degrees Fahrenheit. The subcontractor must either provide shade as per subsection (d)(1) Access to shade or provide timely access to shade upon a worker's request.
- Workers must be allowed and encouraged to take cool-down rest breaks in the shade when they need to do so to protect themselves from overheating. Such access must be permitted at all times.
- Additional High-Heat procedures are required when temperatures equals or exceeds 95 degrees Fahrenheit.
- Training is required for supervisory and non-supervisory employees before the employee begins work that should reasonably be anticipated to result in exposure to the risk of heat illness.
- Additional training for supervisory employees is required.
- Documentation for complying with the requirements of this standard shall be in writing and made available to DOSH upon request.

Revised 4-9-15

Definitions

“Heat Related Illness” (HRI) - means a serious medical condition resulting from the body’s inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

“Environmental risk factors for heat illness” - means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees. These conditions will be considered when determining if controls and methods to reduce the potential for heat related illness are needed.

“Acclimatization” means temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

“Active Cooling Equipment” – Clothing or powered devices (passive or active) that work to provide body core cooling when worn by an employee.

“Heat Illness” means a serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

“Environmental risk factors for heat illness” means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

“Personal risk factors for heat illness” means factors such as an individual’s age, degree of acclimatization, health, water consumption, alcohol consumption, energy drinks consumption, caffeine consumption, and use of prescription medications that affect the body’s water retention or other physiological responses to heat.

“Preventative recovery period” means a period of time to recover from the heat in order to prevent heat illness.

“Temperature” – means the dry bulb temperature in degrees Fahrenheit obtainable by using a thermometer to measure the outdoor temperature in an area where there is no shade. While the temperature measurement must be taken in an area with full sunlight, the bulb or sensor of the thermometer should be shielded while taking the measurement, e.g., with the hand or some other object, from direct contact by sunlight.

Policy

Procedures for Provision of Water (include but are not limited to the following):

Provision of water. Employees shall have access to potable drinking water meeting the requirements of Sections 1524, 3363, and 3457, as applicable, including but not limited to the requirements that it be fresh, pure, suitably cool, and provided to employees free of charge. The water shall be located as close as practicable to the areas where employees are working. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water, as described in subsection (f)(h)(1)(C), shall be encouraged.

- Drinking water containers (of five to 10 gallons each) will be brought to the site, so that at least two quarts per employee are available at the start of the shift. All workers whether working individually or in smaller crews, will have access to drinking water.
- Paper cone rims or bags of disposable cups and the necessary cup dispensers will be made available to workers and will be kept clean until used.
- As part of the Effective Replenishment Procedures, the water level of all containers will be checked periodically (e.g. every hour, every 30 min), and more frequently when the temperature rises. Water containers will be refilled with cool water, when the water level within a container drops below 50 percent. Additional water containers (e.g. five gallon bottles) will be carried, to replace water as needed.
- Ice will be carried in separate containers, so that when necessary, it will be added to the drinking water to keep it cool.
- Water containers will be placed as close as possible to the workers (given the working conditions and layout of the worksite), to encourage the frequent drinking of water. If field terrain prevents the water from being placed as close as possible to the workers, bottled water or personal water containers will be made available, so that workers can have drinking water readily accessible.
- Water containers will be relocated to follow along with the crew, so drinking water will remain readily accessible.
- Water containers will be kept in sanitary condition.

- Daily, workers will be reminded of the location of the water coolers and of the importance of drinking water frequently. When the temperature exceeds or is expected to exceed 90 degrees Fahrenheit, brief 'tailgate' meetings will be held each morning to review with employees the importance of drinking water, the number and schedule of water and rest breaks and the signs and symptoms of heat illness.
- Audible devices (such as whistles or air horns) will be used to remind employees to drink water.
- When the temperature equals or exceeds 95 degrees Fahrenheit or during a heat wave, the number of water breaks will be increased, and workers will be reminded throughout the work shift to drink water.
- During employee training and tailgate meetings, the importance of frequent drinking of water will be stressed.

Procedures for Access to Shade (include but are not limited to the following):

Note: Follow the general guidance provided above, under the Provisions for Water (identify the person assigned the task and list the specific tasks that have to be carried out).

- Shade structures will be opened and placed as close as practical to the workers, when the temperature equals or exceeds 80 degrees Fahrenheit the contractor must have and maintain one or more areas with shade at all times while workers are present that are either open to the air or provided with ventilation or cooling. When the temperature is below 80 degrees Fahrenheit, access to shade will be provided promptly, when requested by an employee. Note: The interior of a vehicle may not be used to provide shade unless the vehicle is air-conditioned and the air conditioner is on.

Enough shade structures will be available at the site, to accommodate the number of employees on the shift at any time recovery or rest periods, so that they can sit in a normal posture fully in the shade without having to be in physical contact with each other.

- Daily, workers will be informed of the location of the shade structures and will be encouraged to take a five minute cool-down rest in the shade.
- Shade structures will be relocated to follow along with the crew and they will be placed as close as practical to the employees, so that access to shade is provided at all times.
- In situations where trees or other vegetation are used to provide shade (such as in orchards), the thickness and shape of the shaded area will be evaluated, before assuming that sufficient shadow is being cast to protect employees.
- In situations where it is not safe or feasible to provide access to shade (e.g., during high winds), a note will be made of these unsafe or unfeasible conditions, and of the steps that will be taken to provide shade upon request.

- For non-agricultural employers, in situations where it is not safe or feasible to provide shade, a note will be made of these unsafe or unfeasible conditions, and of the steps that will be taken to provide alternative cooling measures but with equivalent protection as shade.

Procedures for Monitoring the Weather (include but are not limited to):

- The supervisor will be trained and instructed to check in advance the extended weather forecast. Weather forecasts can be checked with the aid of the internet (<http://www.nws.noaa.gov/>), or by calling the National Weather Service phone numbers (see CA numbers below) or by checking the Weather Channel TV Network. The work schedule will be planned in advance, taking into consideration whether high temperatures or a heat wave is expected. This type of advance planning should take place all summer long.

CALIFORNIA Dial-A-Forecast

Eureka 707-443-7062
Hanford 559-584-8047
Los Angeles 805-988-6610 (#1)
Sacramento 916-979-3051
San Diego 619-297-2107 (#1)
San Francisco 831-656-1725 (#1)

- Prior to each workday, the forecasted temperature and humidity for the worksite will be reviewed and will be compared against the National Weather Service Heat Index to evaluate the risk level for heat illness. Determination will be made of whether or not workers will be exposed at a temperature and humidity characterized as either “extreme caution” or “extreme danger” for heat illnesses. It is important to note that the temperature at which these warnings occur must be lowered as much as 15 degrees if the workers under consideration are in direct sunlight.
- Prior to each workday, the supervisor will monitor the weather (using <http://www.nws.noaa.gov/> or with the aid of a simple thermometer, available at most hardware stores) at the worksite. This critical weather information will be taken into consideration, to determine, when it will be necessary to make modifications to the work schedule (such as stopping work early, rescheduling the job, working at night or during the cooler hours of the day, increasing the number of water and rest breaks).
- A thermometer will be used at the jobsite to monitor for sudden increases in temperature, and to ensure that once the temperature exceeds 85 degrees Fahrenheit, shade structures will be opened and made available to the workers. In addition, when the temperature equals or exceeds 95 degrees

Fahrenheit, additional preventive measures such as the High Heat Procedures will be implemented.

Handling a Heat Wave:

- During a heat wave or heat spike, the work day will be cut short or rescheduled (example conducted at night or during cooler hours).
- During a heat wave or heat spike, and before starting work, tailgate meetings will be held, to review the company heat illness prevention procedures, the weather forecast and emergency response. In addition, if schedule modifications are not possible, workers will be provided with an increased number of water and rest breaks and will be observed closely for signs and symptoms of heat illness.
- Each employee will be assigned a “buddy” to be on the lookout for signs and symptoms of heat illness and to ensure that emergency procedures are initiated when someone displays possible signs or symptoms of heat illness.

High Heat Procedures (include but are not limited to):

High Heat Procedures are additional preventive measures that this company will use when the temperature equals or exceeds 95 degrees Fahrenheit.

- Effective communication by voice, observation, or electronic means will be maintained, so that employees at the worksite can contact a supervisor when necessary. If the supervisor is unable to be near the workers (to observe them or communicate with them), then an electronic device, such as a cell phone or text messaging device, may be used for this purpose if reception in the area is reliable.
- Frequent communication will be maintained with employees working by themselves or in smaller groups (keep tabs on them via phone or two-way radio), to be on the lookout for possible symptoms of heat illness.
- Employees will be observed for alertness and signs and symptoms of heat illness. When the supervisor is not available, an alternate responsible person may be assigned, to look for signs and symptoms of heat illness. Such a designated observer will be trained and know what steps to take if heat illness occurs.
- Employees will be reminded throughout the work shift to drink plenty of water.
- New employees will be closely supervised, or assign a “buddy” or more experienced coworker for the first 14 days of the employment (unless the employee indicates at the time of hire that he or she has been doing similar outdoor work for at least 10 of the past 30 days for four or more hours per day).

Procedures for Acclimatization (include but are not limited to):

Acclimatization is the temporary and gradual physiological change in the body that occurs when the environmentally induced heat load to which the body is accustomed is significantly and suddenly exceeded by sudden environmental changes. In more common terms, the body needs time to adapt when temperatures rise suddenly, and an employee risks heat illness by not taking it easy when a heat wave strikes or when starting a new job that exposes the employee to heat to which the employee's body hasn't yet adjusted.

Inadequate acclimatization can be significantly more perilous in conditions of high heat and physical stress.

- (1) All employees shall be closely observed by a supervisor or designee during a heat wave. For purposes of this section only, "heat wave" means any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit and at least ten degrees Fahrenheit higher than the average high daily temperature in the preceding five days.
- (2) An employee who has been newly assigned to a high heat area shall be closely observed by a supervisor or designee for the first 14 days of the employee's employment.

Employers are responsible for the working conditions of their employees, and they must act effectively when conditions result in sudden exposure to heat their employees are not used to.

- The weather will be monitored daily. The supervisor will be on the lookout for sudden heat wave(s), or increases in temperatures to which employees haven't been exposed to for several weeks or longer.
- During a heat wave or heat spike, the work day will be cut short (example 12 p.m.), will be rescheduled (example conducted at night or during cooler hours) or if at all possible cease for the day.**
- For new employees, the intensity of the work will be lessened during a two-week break-in period (such as scheduling slower paced, less physically demanding work during the hot parts of the day and the heaviest work activities during the cooler parts of the day (early-morning or evening). Steps taken to lessen the intensity of the workload for new employees will be documented.
- The supervisor will be extra-vigilant with new employees and stay alert to the presence of heat related symptoms.

- New employees will be assigned a “buddy” or experienced coworker to watch each other closely for discomfort or symptoms of heat illness.
- During a heat wave, all employees will be observed closely (or maintain frequent communication via phone or radio), to be on the look out for possible symptoms of heat illness.
- Employees and supervisors will be trained on the importance of acclimatization, how it is developed and how these company procedures address it.

Procedures for Emergency Response (include but are not limited to):

- Prior to assigning a crew to a particular worksite, workers and the foreman will be provided a map of the site, along with clear and precise directions (such as streets or road names, distinguishing features and distances to major roads), to avoid a delay of emergency medical services.
- Prior to assigning a crew to a particular worksite, efforts will be made to ensure that a qualified and appropriately trained and equipped person is available at the site to render first aid if necessary.
- Prior to the start of the shift, a determination will be made of whether or not a language barrier is present at the site and steps will be taken (such as assigning the responsibility to call emergency medical services to the foreman or an English speaking worker) to ensure that emergency medical services can be immediately called in the event of an emergency.
- All foremen and supervisors will carry cell phones or other means of communication, to ensure that emergency medical services can be called. Checks will be made to ensure that these electronic devices are functional prior to each shift.
- When an employee is showing symptoms of possible heat illness, steps will be taken immediately to keep the stricken employee cool and comfortable once emergency service responders have been called (to reduce the progression to more serious illness).
- At remote locations such as rural farms, lots or undeveloped areas, the supervisor will designate an employee or employees to physically go to the nearest road or highway where emergency responders can see them. If daylight is diminished, the designated employee(s) shall be given reflective vest or flashlights in order to direct emergency personnel to the location of the worksite, which may not be visible from the road or highway.
- During a heat wave or hot temperatures, workers will be reminded and encouraged to immediately report to their supervisor any signs or symptoms they are experiencing.

- Employees and supervisors training will include every detail of these written emergency procedures.

Handling a Sick Employee:

- **When an employee displays possible signs or symptoms of heat illness, a trained first aid worker or supervisor will check the sick employee and determine whether resting in the shade and drinking cool water will suffice or if emergency service providers will need to be called.** A sick worker will not be left alone in the shade, as he or she can take a turn for the worse!
- When an employee displays possible signs or symptoms of heat illness and no trained first aid worker or supervisor is available at the site, emergency service providers will be called.
- **Emergency service providers will be called immediately if an employee displays signs or symptoms of heat illness (loss of consciousness, incoherent speech, convulsions, red and hot face), does not look OK or does not get better after drinking cool water and resting in the shade. While the ambulance is in route, first aid will be initiated (cool the worker: place the worker in the shade, remove excess layers of clothing, place ice pack in the armpits and groin area and fan the victim).** Do not let a sick worker leave the site, as they can get lost or die before reaching a hospital!
- If an employee does not look OK and displays signs or symptoms of severe heat illness (loss of consciousness, incoherent speech, convulsions, red and hot face), and the worksite is located more than 20 minutes away from a hospital, call emergency service providers, communicate the signs and symptoms of the victim and request Air Ambulance.

Procedures for Employee and Supervisory Training (include but are not limited to):

- Supervisors will be trained prior to being assigned to supervise other workers. Training will include this company's written procedures and the steps supervisors will follow when employees' exhibit symptoms consistent with heat illness.
- Supervisors will be trained on how to track the weather at the job site (by monitoring predicted temperature highs and periodically using a thermometer). Supervisors will be instructed on, how weather information will be used to modify work schedules, to increase number of water and rest breaks or cease work early if necessary.

- All employees and supervisors will be trained prior to working outside. Training will include the company's written prevention procedures.
- Employees will be trained on the steps that will be followed for contacting emergency medical services, including how they are to proceed when there are non-English speaking workers, how clear and precise directions to the site will be provided and the importance of making visual contact with emergency responders at the nearest road or landmark to direct them to their worksite.
- When the temperature exceeds 75 degrees Fahrenheit, short 'tailgate' meetings will be held to review the weather report, to reinforce heat illness prevention with all workers, to provide reminders to drink water frequently, to inform them that shade can be made available upon request and to remind them to be on the lookout for signs and symptoms of heat illness.
- New employees will be assigned a "buddy" or experienced coworker to ensure that they understand the training and follow company procedures.

Timely access to shade is required at all times, provisions to be made by the employer for their employees. Upon days where the temperatures are forecast to be above 80 degrees, an adequate supply of shade is expected to be present very near the work location. Upon days where the temperatures are forecast or become 95 degrees or higher, **high-heat** procedures will be implemented by the employer.

Outdoor Work Assignments

Managers and supervisors shall ensure that they are aware of the most current and accurate meteorological information (ambient temperature and relative humidity) in areas of the project where they will be assigning employees to work. The manager and/or supervisor shall implement the proper controls when local weather conditions have achieved, or are expected to achieve the following threshold:

more than 48 hours with day time temperatures at or above 80° F and relative humidity at or above 80%.

Work Assignments in Indoor Environments

Where employees are assigned work in an indoor environment where ambient temperatures will meet or exceed 100° F, managers and supervisors will ensure that:

- Prior to the start of the work shift, when interior environmental conditions require the application of the HIPPA, managers and/or supervisors shall meet with their employees, and review the work procedures to be used during the high heat period.

- Managers and/or supervisors shall ensure that exposed employees have access to cool potable drinking water. Water must be provided to employees at the beginning of the work shift in sufficient quantities to ensure that employees can consume one quart of potable water per hour.
- Employees may be provided with smaller quantities of water if provisions are made to supply one quart of water per hour per employee.
- Managers and/or supervisors shall encourage frequent drinking of water by employees.
-

Managers and/or supervisors shall ensure that employees assigned work outdoors and exposed to high environmental temperatures shall have quick and effective access to a rest area where shade is available, or to an area where ventilation or cooling is provided for a period of not less than 5 minutes. Employees shall have access to shade or cooling.

Training:

Employee training: Effective training in the following topics shall be provided to each supervisory and non-supervisory employee before the employee begins work that should reasonably be anticipated to result in the exposure to the risk of heat illness:

- Environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body caused by exertion, clothing, and personal protective equipment.
- The employer's procedures for identifying, evaluating, and controlling exposures to heat illness,
- The importance of frequent consumption of water, up to 4 cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.
- The importance of acclimatization,
- The different types of heat illness and the common signs and symptoms of heat illness,
- The importance of immediately reporting symptoms or signs of heat illness in themselves or coworkers to the employer,
- The employer's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided if the need arises,
- Procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by medical service personnel,

- The employer's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders. These procedures shall include designating a person to be available to ensure that emergency procedures are invoked when appropriate.

Supervisor training:

Prior to supervising employees performing work that should reasonably be anticipated to result in exposure to the risk of heat illness; effective training on the following topics shall be provided to the supervisor:

- The information provided for non-supervisory employee training,
- Procedures the supervisor will follow to implement controls as determined by the employer,
- Procedures the supervisor will follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.
- How to monitor weather reports and how to respond to hot weather advisories.

First Aid awareness and actions in the event of a heat related illness:

The following chart (next page) will assist employees to recognize the different types of heat related illnesses, symptoms, and the appropriate treatment to reduce the effects of the heat related illness:

	Symptoms	Treatment
Heat cramps	<ul style="list-style-type: none"> ● muscle spasms in legs or abdomen 	<ul style="list-style-type: none"> ● move person to a cooler location ● stretch muscles for cramps ● give cool water or electrolyte-containing fluid to drink
Heat exhaustion	<ul style="list-style-type: none"> ● headaches ● clumsiness ● dizziness/lightheadedness/fainting ● weakness/exhaustion ● heavy sweating/clammy/moist skin ● irritability/confusion ● nausea/vomiting ● paleness 	<ul style="list-style-type: none"> ● move person to a cooler place (do not leave employee alone) ● loosen and remove heavy clothing that restricts evaporative cooling ● if conscious, provide small amounts of cool water to drink ● fan person, spray with cool water, or apply a wet cloth to skin to increase evaporative cooling ● call 911 if not feeling better within a few minutes
Heat stroke	<ul style="list-style-type: none"> ● sweating may or may not be present ● red or flushed, hot dry skin ● bizarre behavior ● mental confusion or losing consciousness ● panting/rapid breathing ● rapid, weak pulse ● Seizures or fits. 	<ul style="list-style-type: none"> ● call 911 ● move person to a cooler place (do not leave employee alone) ● cool worker rapidly ● loosen and remove heavy clothing that restricts evaporative cooling ● fan person, spray with cool water, or apply a wet cloth to skin to increase evaporative cooling

Controls for reducing heat exposure:

Understanding the effects of heat and devising a means to reduce our exposure to unnecessary heat is paramount in avoiding heat related illness. As part of the activity pre-pre-planning process, methods to reduce employee heat exposure should be explored.

Some methods to reduce heat exposure are:

- Adjusted work hours
- Individual canopy use (i.e. for welders)

- Use of light breathable clothing suitable for the task
- Rotation of manpower out of direct sunlight
- Attention to heat emitted from equipment
- Use of fans

Supervisory and non-supervisory concerns regarding heat illness prevention should be addressed to Turner's project management team.

Appendix K: AIR POLLUTION CONTROL PLAN

1.0 PURPOSE

The purpose of this policy is to set forth instructions and establish requirements to prevent or minimize the release into the air of dust, vapors and smoke associated with onsite construction or build-out activities. These requirements have been established to help comply with; applicable federal, state, and local laws, regulations, standards and requirements; Turner Construction Company's Minimum Performance Standards (MPS); and project and site specific Turner Construction Company's standards and requirements. Where local or state regulations require more stringent or different controls, each project must incorporate those requirements into this plan.

2.0 APPLICABILITY

The Air Pollution Control Policy applies to all Turner Construction Company Subcontractors. Turner Construction Company is responsible for coordinating air pollution minimization and control efforts required by this guideline and for establishing systems with the site subcontractors to ensure communication of this guideline and compliance with its requirements.

Each contractor and subcontractor will be responsible for the prevention/reduction of air pollution associated with construction and build-out related activities that are contractually their responsibility.

Air pollutants include the presence in the ambient air generated within the onsite property boundary of dust, vapors, fumes, mist, gas, smoke, or odorous substances in sufficient quantities and having characteristics and duration that exceed or contribute to exceeding government laws, regulations and standards or that cause deterioration of the "quality of life" in neighboring properties.

The following are examples of construction related activities that potentially generate air pollution:

Site preparation and civil engineering work (dust): grubbing, clearing, scraping, excavating, piling and filling of earth materials; stock piles of earth materials and exposed earth areas.

Vehicular traffic (dust): exposed earth and gravel surfaces.

Soil treatment (chemical dust / spray / vapors): lime, pesticides, fungicides, dust suppressants, fertilizer.

Construction materials surface preparation and coating (aggregate/metal dust, chemical spray / vapors): sand / bead blasting, painting, epoxy coating, hot tar roofing, asphalt paving.

Mobile equipment (aggregate / chemical dust / spray / vapors): portable concrete batch plants, rock crushers, chippers, thermal treatment of debris and soils, tank vents, portable electrical generators.

Demolition (dust / asbestos / lead): removal of buildings, structures, pipes and tanks.

3.0 COMMUNICATION AND PLANNING

The following is a brief summary of the key elements, by construction activity, that must be addressed to prevent or reduce construction related air pollution in accordance with the applicable laws and regulations and requirements of Turner Construction Company and the General Contractor. Appendices A through F are provided as in-field checklists to ensure compliance with this plan.

4.0 SITE PREPARATION AND VEHICULAR TRAFFIC

Site preparation and vehicular traffic requirements shall comply with local regulations pertaining to airborne particulate matter (PM10) and the SWPPP.

See Appendix A for Site Planning Activities Checklist
See Appendix B for Area Water Application Log Sheet

5.0 CONSTRUCTION MATERIAL SURFACE PREPARATION AND COATING

The construction of roads, buildings and other structures often requires the surfaces to be prepared prior to applying surface coatings. These activities, along with the surface coatings themselves, can result in the generation or release of air pollutants. In preparing the surfaces, sand or bead blasting is often used, which generates aggregate and metal dust particles. The application of surface coatings can generate fumes, vapors and strong odors (epoxy coatings, painting, hot tar roofing and asphalt paving). Key elements associated with these activities include the following:

Architectural coatings and Surface coatings must meet the requirements and Volatile Organic Compound (VOC) limits set forth in *South Coast Air Quality Management District Rules/ Air Pollution Control District County of San Diego and the Project Specifications*. Turner Construction Company must approve the specific material/chemical to be used for bead / shot / sand blasting, for coating or painting, and for any solvents associated with these activities prior to any of these materials arriving on the project site. All abrasive blasting shall be done using California Air Resources Board (ARB) approved blast media. Wet blasting shall be used where possible.

To prevent dust that is generated during abrasive blasting, or over spray from painting activities from traveling beyond the immediate work area, sheeting material should be used to separate the work area from the rest of the site.

Surface preparation and coating activities that is being performed outdoors and not within enclosed areas should not be performed during windy conditions. This depends on the activity being performed, the chemicals being used, strength of the wind, and the location and distance from the work area to the sensitive receptors (i.e., nearest residence, outside eating area, foot traffic areas).

See Appendix D for Surface Preparation and Coating Checklist

6.0 OTHER APPLICABLE PERMITS AND PLANS

Hazardous Material Control Plan
Hazardous Waste Management Plan
Solid Waste Management Plan
Pollution Prevention/Environmental Incident Response Plan

7.0 TRAINING

Turner Construction Company is responsible for establishing a communication program for applicable subcontractors to communicate the requirements of this guideline as well as the requirements, which are developed from site-specific air pollution control measures, such as the dust control plan.

Subcontractors are required to have their Competent Person completed the Storm water Sub Contractor Short Course (1 Hour) through Turner University (\$99.00) per course and submit completion certification to the Turner Safety Officer.

Self- Auditing:

Turner Construction Company should conduct site audits on a regular interval to ensure that pollution control requirements are being consistently met.

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APPENDIX A
SITE PLANNING ACTIVITIES
(Page 1 of 2)

Identify whether the project will involve any activities that may generate significant amounts of air pollutants. Mark each activity identified below:

-	Site preparation		
-	Vehicular traffic		
-	Construction material surface preparation & coating		
-	Mobile equipment		
-	Demolition		
-	(Other)		
___	-	-	___
___	-	-	___

2. Determine what agency approvals, permits or notifications are required for any of the activities listed above.

___	-	-	___	-	-
___	-	-	___	-	-
___	-	-	___	-	-
___	-	-	___	-	-
___	-	-	___	-	-
___	-	-	___	-	-

3. Identify an owner for each permit and ensure required permits are obtained.

Permit	___	Owner	___
Application initiated	___	Application reviewed by: GC	___ Project Name/No ___
Applications submitted	___	Permit Issued	___
Permit	___	Owner	___
Application initiated	___	Application reviewed by: GC	___ Project Name/No ___
Applications submitted	___	Permit Issued	___
Permit	___	Owner	___
Application initiated	___	Application reviewed by: GC	___ Project Name/No ___
Applications submitted	___	Permit Issued	___

APPENDIX A

**SITE PLANNING ACTIVITIES
(Page 2 of 2)**

Permit	—	Owner	—
Application initiated		Application reviewed by: GC	ProjectName/Number —
Applicationsubmitted	—	Permit Issued	—
Permit_	—	Owner_	—
Application initiated		Application reviewed by: GC	ProjectName/Number —
Applicationsubmitted	—	Permit Issued	—

4. Verify the necessary performance controls have been established, such as:
 - _ Indicators to monitor and demonstrate compliance with the wastewater management plan
 - _ Logbooks required to record inspections
 - _ Established inspection criteria with owner identified

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APPENDIX B

THIS LOG IS TO REMAIN IN THE CAB OF THE WATERING TRUCK AND BE AVAILABLE FOR AUDITING AT ALL TIMES. EACH TIME WATER IS APPLIED; THE WATER TRUCK DRIVER IS REQUIRED TO RECORD INFORMATION IN THE SPACES PROVIDED BELOW.

[illegible]

WHEN ALL AVAILABLE SPACES ON THIS LOG SHEET HAVE BEEN COMPLETED, DELIVER THIS SHEET TO THE TURNER CONSTRUCTION COMPANY OFFICE AND START A NEW SHEET.

CHEMICAL APPLICATION CHECKLIST

PRIOR TO THE SHIPMENT OF CHEMICALS TO THE SITE FOR APPLICATION, TURNER CONSTRUCTION COMPANY WILL VERIFY

- 1. Turner Construction Company has approved the use of the chemical, as indicated by a Hazardous Material Information Sheet showing approval for this specific use of the chemical.
- 2. If the chemical must be applied only by trained and licensed / permitted individuals, obtain a copy of the permit for each individual who will be applying the chemical and submit a copy to Turner Construction Company.

PRIOR TO APPLICATION OF ANY CHEMICALS BY TURNER CONSTRUCTION COMPANY OR ANY SUBCONTRACTOR, THE INDIVIDUAL APPLYING CHEMICALS WILL:

- 1. Check wind speed and direction. The chemicals should not be applied when the wind is blowing. Depending on the direction of the wind, the distance to sensitive receptors (i.e., off site, people, plants and animals, or bodies of water) the method of application, the type of chemical being applied and the physical form of the chemical, chemicals should only be applied when there is no wind or when the winds are considered calm.
- 2. Read and understand all instructions for the application of the chemical. The chemicals should not be applied at a rate greater than specified by the manufacturer, or as stated in the specification.
- 3. Ensure area is clear of any personnel or animals that may be affected by the chemical per Manufacturer's instructions.

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SURFACE PREPARATION AND COATING CHECKLIST

PRIOR TO THE SHIPMENT OF CHEMICALS OR OTHER MATERIALS TO BE USED FOR SURFACE PREPARATION OR COATING TO THE SITE, TURNER CONSTRUCTION COMPANY WILL VERIFY:

- _ 1. Turner Construction Company has approved the use of the chemical, as indicated by a Hazardous Material Information Sheet, showing approval for this specific use of the chemical.

PRIOR TO APPLICATION OF ANY CHEMICALS BY TURNER CONSTRUCTION COMPANY OR ANY SUBCONTRACTOR, THE INDIVIDUAL APPLYING CHEMICALS WILL:

- _ 1. Ensure that sheeting material or other protective measures have been set in place to separate the work area from the rest of the site. Insure that this has been established in a manner to prevent dust that is generated during bead/sand blasting, or over spray from painting activities, from traveling beyond the immediate work area.
- _ 2. Check wind speed and direction. Surface preparation and coating activities that are being performed outside and not within enclosed areas should not be performed during windy conditions. This depends on the activity being performed, the chemicals being used, strength of the wind, and the location and distance from the work area to the sensitive receptors (i.e., nearest residence, outside eating area, foot traffic areas).

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**APPENDIX E
MOBILE EQUIPMENT SETUP CHECKLIST**

(Mobile equipment such as portable concrete batch plants and rock crushers are required to have permits from either the state or local agency responsible for the air pollution control program.)

PRIOR TO SITE DELIVERY OF MOBILE EQUIPMENT WHICH REQUIRES EITHER STATE OR LOCAL PERMITS, THE SUBCONTRACTOR RESPONSIBLE FOR THE EQUIPMENT WILL:

- _ 1. Obtain all required state and local permit(s) for use of the equipment.
- _ 2. Provide Turner Construction with a copy of the permits required.

PRIOR TO SITE ARRIVAL OF MOBILE EQUIPMENT THAT REQUIRES EITHER STATE OR LOCAL PERMITS, TURNER CONSTRUCTION WILL:

- _ 3. Obtain a copy of the permit(s) from the Subcontractor providing the equipment prior to allowing the equipment onto the project site.
- _ 4. Independently contact the appropriate air pollution control agency to confirm that a permit is not required, if so stated by the Subcontractor, and to confirm the Subcontractor's compliance history.
- _ 5. Identify equipment setup locations that will minimize the potential for air pollutants from the equipment to travel beyond (Project Name)'s property.
- _ 6. Notify the subcontractor of equipment setup and operation areas.

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APPENDIX F DEMOLITION OPERATIONS CHECKLIST

(The demolition of buildings, tanks, piping systems, etc. can often result in the release of air pollutants. Depending on the age of the building, the materials of construction could contain asbestos or lead-based paint. Depending on the chemicals [if any] used, the ductwork or pipes may contain residual chemicals of concern [i.e., arsenic in duct work, solvent or petroleum vapors in pipes]. Tanks [above, below and in-ground] also may contain materials which can release vapors or pose a potential hazardous situation when being removed.)

PRIOR TO STARTING ANY DEMOLITION WORK, **TURNER CONSTRUCTION COMPANY** OR SUBCONTRACTOR TO PERFORM THE WORK WILL:

- _ 1. Determine the characteristics of the area to be demolished, including any chemical hazards and residues (e.g., lead, asbestos, fuel oil, hazardous chemicals, sludge).
- _ 2. Determine if any state or local permits are required for demolition (e.g., asbestos removal, lead removal, removal/decommissioning of underground or above ground tanks).
- _ 3. Insure that if permits are required, those permits have been obtained.

IF SAND / SHOT / BEAD BLASTING IS TO BE PERFORMED:

- _ 1. Required control measures must be identified and put in place prior to starting work.

Sand / shot / bead blasting of metal (interior / exterior) tanks, heavy equipment and steel structures generates spent abrasive material and removed rust and paint chips. The paint being removed may contain lead, requiring that additional steps be taken to prevent the release of these materials into the atmosphere and onto the ground/surface waters. Prior to removal of any paint/primer, a determination needs to be made whether the materials to be removed contain lead.

IF DISMANTLING OR DISASSEMBLY OF TANKS, PIPES, PUMPS OR VALVES IS TO BE PERFORMED:

- _ 1. Check for the presence of liquids, sludge or residues.
- _ 2. Remove any liquid; sludge or residues identified, in accordance with Government, Owner and Contractor requirements, prior to demolition.

Appendix L: BARRICADE PLAN

PURPOSE:

The purpose of this policy is to provide employees with an awareness of the different types of barricades and to prevent unauthorized personnel or equipment from entering a barricaded area.

This policy covers the set up and maintenance of barricades on the jobsite that will restrict entry and/or provide warning for areas that involve construction activity contain safety hazards, abnormal conditions, or in which unusual operations are being performed.

POLICY:

There are various types of barricades used in the workplace for many different purposes, some are permanent or temporary fixed, such as walls, fences and staging poles. Some are temporary such as tape, cones, rope and chain. Barricade tape is the most common type of barricade we utilize and the main subject of this policy, although it applies to any type of barricade Turner Construction and Trade Partners/Subcontractors may install.

All work areas where a hazard exists or may exist as the result of maintenance, construction, x-raying, hazardous material release, equipment failure, weather or any other emergency or unsafe condition shall be barricaded. Signs and barricade tape only provide a warning of a potential unsafe or hazardous condition. Whenever physical restraint is required, guardrails or other fixed devices shall be installed.

Barricades are often violated without regard for the reason they were installed. This endangers not only the person(s) violating the barricade, but also those with assigned tasks within the barricaded area. Therefore, barricaded areas shall have a completed Trade Partners/Subcontractors barricade tag attached. Only personnel with assigned tasks inside a barricaded area shall enter; all others must receive permission from the person in charge.

To promote safety and efficiency, the following procedure applies whenever barricades are installed:

PROCEDURE:

Barricade Types:

1. **Warning** – These call attention to the hazard, but offer no physical protection. There are various types of warning barricades that could be used on a job site, as follows:

- **Yellow and Black – Warning** (barricade tag required)

Caution signs, indicating what the hazard is, may or may not be needed with this barricade. Employees should exercise caution when determining the hazard involved upon entering an area barricaded in yellow. An example of its use would

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be an area where employees are performing overhead work, which could be hazardous to employees working below.

- **Red and Black or Red – Danger** (barricade tag required)

This color will be used to prohibit entry or passage through an area by all employees, except those authorized to do so. Careful job planning is required to use this color so as to assure its effectiveness. Turner Construction and Trade Partners/Subcontractors and other personnel must not cross a RED Barricade without authorization from the supervisor responsible for the job activity.

Red barricade tape should be used only when conditions are of an imminent danger or hazards may potentially become life threatening or of a debilitating nature.

Turner's red barricade tape policy is:

"Red and Black or Red – Danger (barricade tag required), in the event there is no tag we still must not lift the tape and go inside. This color is used to prohibit the entry of anyone except those who are authorized to be inside that containment. We must get the attention of the authorized parties for entry and escort throughout that area; they know where the hazards are." Proper signage should accompany the tape identifying the hazard if possible, who the authorized person is to gain entry and how to contact them.

Circumventing this policy is considered a serious violation and should not be taken lightly.

There are no double standards; we must all comply with our policies as well as federal/state regulations.

- **Yellow and Magenta – Radiography (X-Ray)**

This barricade is used to mark the area in which radiography is being conducted. Employees are not to cross or alter this barricade tape under any circumstances. Exposure to X-Rays may cause health problems. Since X-Rays cannot be detected by the sense of smell, touch, hearing or sight, it is critical that this barricade is not crossed.

- Other types of barricades, such as orange plastic fences, red paint stripes, cones and wooden sawhorses may be used by Trade Partners/Subcontractors.

2. **Protective** - Protective barricades provide physical protection, and should be made from structurally sound materials such as wood, pipe or scaffold members. All posts should be set in the ground or anchored, and be capable of withstanding 200 lbs. of force applied in any direction, with minimum deflection. Typically these barricades should be constructed along walkways, roadways and around pits and certain

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excavations. These should be painted or use barricade tape, as outlined in the prior section.

- 3. Special Barricades** - Certain work activities require special barricading that identifies the potential hazard associated with the work being performed. Listed below are some examples:

- Asbestos
- Benzene
- Lead

4. Placement of Barricades and Barricade Tape

All barricades are to be placed as follows:

- Erected and tagged prior to actual work beginning, to avoid leaving an area unprotected.
- Marked with lights at night if they are located in walkways or roadways.
- The crew beginning the work is responsible for erecting the barricade around the work area. All Turner Construction Trade Partners/Subcontractors employees working inside the barricaded area are responsible for maintaining it.
- Barricades should be about 42" high. Tape should be tied to substantial building parts, pipe stations and other fixed structures, not to instrument lines, valves, process equipment, etc.
- Barricades shall not be used to block fire doors or their access
- Whenever a barricade is installed, a Turner Construction Trade Partners/Subcontractors Barricade Tag must be completely filled out and attached to the barricade in a readily visible location. A client supplied Barricade Tag may also be used for this purpose.
- Tags can be obtained from a supervisor or the tool room.
- When a large area is barricaded, a completed barricade tag will be attached in multiple locations to prevent unauthorized entry.
- The barricade shall be removed when no longer needed. The barricade is to be removed only with the permission of the person who erected it or the Turner Superintendent/Safety Manager.

Appendix M: CODE OF SAFE WORK PRACTICES

Any person not directly involved with the on-site construction of this Project shall first proceed to Turner Construction Company Project Office to obtain permission to enter the site. They will sign a visitor / vendor release, and obtain a visitor's badge, if applicable. Hard Hat, safety glasses, gloves, long pants, shirts with sleeves and hard sole work boots are required for access to the construction site.

Basic Principles of the Project Safety and Health Program:

1. All Project employees shall comply with Turner requirements, as well as their company's Safety Program and all Federal, State, and Local Codes and Regulations.
2. All Subcontractors shall submit their Company's Safety Program in writing to the Project Superintendent prior to the start of work. As a minimum, the Subcontractor's Safety and Health Program shall incorporate all the requirements of CCR Title 8, Subchapter 4 (Construction Safety Orders), Section 1509 and shall address how the Subcontractor intends to implement for the prevention of incidents to their employees, fellow workers, the general public, and property of all concerned. All subcontractors shall ensure that their employees are trained in, and agree to comply with, Turner Construction Company minimum requirements.
3. Each Subcontractor shall ensure that their Subcontractors and suppliers, regardless of tier, shall comply with Turner Construction Company's safety requirements, the Subcontractor's Company Safety Program and all Federal, State, and Local Codes and Regulations.
4. All costs to Turner Construction Company of Federal, State, and Local citations, fines, penalties, or summons resulting from the Subcontractor's operations shall be back charged to the Subcontractor and will include administrative fees.
5. Each Subcontractor shall have a scheduled inspection and maintenance program for all tools and equipment.
6. Each Subcontractor shall have at least one (1) qualified CPR/ first-aid person on the Project at all times. The name(s) of this individual and his/her date of certification shall be submitted to the Project Superintendent or designee at the start of their work. Any change shall be noted in the weekly Toolbox Talk Meeting Minutes.

7. All Subcontractors are required to comply with Turner Construction's 30 Hour OSHA Outreach Training Policy.
8. Each Subcontractor shall supply cool drinking water and disposable cups for their employees, per CCR Title 8, Section 1524.
9. Each Project office shall be equipped with a copy of the CAL/OSHA Construction Standards, Turner Construction Company Safety Program, Sub-Contractors Safety Program, Hazard Communication Program and 20lb ABC Fire Extinguisher.
10. **Aluminum ladders** of any type and painted wooden ladders shall **not** be permitted on this Project.
11. Alcoholic beverages as well as illegal drugs shall **not** be allowed on any Turner project.
12. Radios of any type shall **not** be allowed on any Turner Project. (Except for project communication)
13. All persons shall follow these safe practice rules, render every possible aid to safe operations, and report all unsafe conditions or practices to managers or supervisors.
14. Managers and supervisors shall insist on employees observing and obeying every rule, regulation, and order as necessary to the safe conduct of the work, and shall take such action as is necessary to obtain observance.
15. All employees shall be given frequent injury and illness prevention instructions.
16. Anyone known to be under the influence of drugs or intoxicating substances which impair the employee's ability to safely perform his/her assigned duties shall not be allowed on the job while in that condition.
17. Running, jumping, horseplay, scuffling, and other acts which tend to have an adverse influence on the safety or wellbeing of the employees shall be prohibited.
18. Work shall be well planned and supervised to prevent injuries in the handling of materials and in working together with equipment.

19. Employees shall be instructed to ensure that all guards and other protective devices are in proper places and adjusted, and shall report deficiencies promptly to the manager or supervisor.
20. Employees shall not enter underground vaults, chambers, tanks, manholes, silos, or other similar confined places that receive little ventilation, unless it has been determined that it is safe to enter.
21. Employees shall not handle or tamper with any electrical equipment, machinery, or air or water lines in a manner not within the scope of their duties, unless they have received instructions from their supervisor or manager. Respect electricity under all circumstances. Never use electrical equipment in areas of excessive moisture unless all safeguards have been taken. Electric power tools are grounded thru approved cords, including extension, for your safety. Never remove or alter polarized cords or plugs.
22. When lifting heavy objects, the large muscles of the leg instead of the smaller muscles of the back shall be used. Learn and practice the proper way to lift or carry materials or any object. Do not operate any type of powered material handling or hoisting equipment unless you have been trained and authorized. **Get help in handling heavy or bulky loads; no one is to lift anything that weighs more than 50 pounds.**
23. Stay clear of heavy earthmoving equipment. Remain aware of warning devices such as bells, horns, or whistles. Hard hats, gloves, safety glasses, are mandatory; always wear them while working in the construction zones. Use other protective gear as recommended when exposed to unusual hazards. Never attempt an operation with which you are not familiar, ask first for specific instructions. Wear suitable work clothes at all times, heavy soled work boots to protect against puncture injuries.
24. Basic first aid is of value in the event of injury. Know how, it may save a fellow worker from death. Never attempt to move a person who may possibly suffer from an injured spine or other internal injury unless proper methods are completely understood. All injuries shall be reported immediately to Turner Construction, your manager or supervisor so that arrangements can be made for medical or first aid treatment.
25. Accident Prevention: All workers must abide by Cal/Osha Construction Safety Orders; General Industry Safety Orders and Turner Construction policies and procedures. Posters and other safety materials are displayed for the benefit of every worker, read and abide by these suggestions. Give every possible aid in the event of an injury.

26. Accident Reporting; Report all personal injuries to Turner Construction and your manager supervisor immediately. Obtain authorization for any work related injury from Turner Construction, your manager /supervisor. A medical release is necessary before returning to work.
27. Job Site: Keep work areas free of debris, good housekeeping is **essential**. **"Nothing Hits the Ground"** Remove or correct any hazards immediately. Never work or pass under suspended loads or equipment.
28. Work Habits: Assist other trades when necessary to maintain operations. Never place yourself, or allow others to work in a dangerous environment. Use the right tool or equipment for all work. Use of any alcohol beverage is strictly prohibited on the job. Never be party to horseplay, pranks can be fatal. Construction sites offer unusual hazards, walk and work with all due respect them.
29. Hand Tools: Always use the proper tool and maintain them in good condition at all times. Loose or broken handles, mushroom heads, dull cracked blades , improper size or type of tool shall never be used.
30. Power Tools: Power activated tools must only be used by trained personnel. Know the proper method of using, a skill saw; never block back the retractable guard it is for your protection. Never use a tool with which you are not fully experienced with.
31. Protective Devices: Hand or guardrails, protective covers, toe-boards, ramps and safety devises installed on various tools are for your safety. Do not tamper with, remove or damage these protective measures. Report, replace, correct any unsafe guard or devise immediately to Turner Construction, your manager /supervisor.
32. Transportation: Riding in the bed of a pickup is **PROHIBITED**. Be careful of any tools, materials or equipment within the truck body which may shift or slide causing injury.
33. Flammables, Solvents: Never use gasoline or other highly volatile liquids for cleaning purposes. Oxygen and acetylene cylinders can be dangerous, secure against rolling or tipping. Never store inside a building and separate them a minimum of 20 feet apart. Do not expose tanks or container that may contain explosive vapor or liquid to open flame or spark.

EARTHQUAKE EMERGENCY RESPONSE POLICY

Purpose

Earthquake preparedness must become a way of life for most regions of the Southwest Business Unit. In the event of a major earthquake, freeways and surface streets may be impassable and public services could be interrupted or taxed beyond their limits. Therefore, everyone must know how to provide for their own needs for an extended period of time, whether at work, home or on the road.

Our goal in providing this information is to encourage you to prepare for a major earthquake and to maintain that readiness. Part of becoming ready is having the necessary supplies. Earthquakes, in our area, can happen at any time. They are not totally predictable. There are long periods between episodes. The quality of life and the potential for survival are greatly increased by being prepared.

1. Application: The scope of the following plan applies to all earthquake scenarios including those of a magnitude which may cause major structural damage, medical emergencies and fatalities, power outages, the disruption of normal communication systems, travel disruptions due to road damage and bridge collapse, fires and other quake associated perils.

2. Responsibility: Each location supervisor is responsible for completing and updating the required sections of this plan.

3. Response Team Assignments: When determining Response Team assignments, the location supervisor should consider an employee's willingness and ability to perform emergency response tasks.

4. Preparedness Instruction and Training: The plan's requirements should be communicated to all location employees and rehearsed as required. Employees with Response Team responsibilities should be trained in the use of emergency response tools, supplies and equipment, and in the selection and use of personal protective equipment.

5. Implementation: The procedures outlined in this plan will be implemented after the earthquake shaking has stopped. The duck, cover and hold procedure shall be followed at the first indication of an earthquake.

Earthquake Assembly Area

Location on Site: Select an area that will not pose post earthquake dangers.

Earthquake Evacuation Procedure

After the Shaking

Remain calm. Job foreman or contractor supervision should check for injured workers, employees or trapped individuals. If a worker is seriously injured, unconscious or trapped, workers should be trained to request evacuation assistance from a Turner Staff member or from the Search and Rescue Team. Anyone seriously injured, who should not be moved immediately, should be left where they are unless there is imminent danger, such as fire or the threat of immediate structural collapse. The location of seriously injured or trapped individuals who were not assisted during the initial evacuation must be reported to the emergency response Command Center.

Earthquake Evacuations

Proceed in a calm and orderly manner to the nearest building exit. If you are already outdoors, do not go back into the building. If a power failure occurs and emergency lighting is not available or is insufficient for a safe exit, wait for someone with a flashlight to provide assistance. The Search and Rescue Team will provide evacuation assistance to workers and employees with disabilities. Interior structural damage, fallen furnishings, broken glass and other debris may obstruct primary exit routes. Know your alternate routes. When exiting the building, be aware of exterior hazards such as glass from broken windows, fallen bricks, exterior building materials and downed power lines.

Once outside, stay away from the buildings, including covered meeting areas. Keep clear of metal fencing, and go to the designated assembly area.

Accounting for All the Location's Occupants

Supervisors will check to see that all their workers have arrived at the assembly area. Members of the Employee Accounting and Release Team will confirm the presence of all employees. The names of any missing employees and the names and locations of any injured or trapped persons remaining in the building will be immediately reported to the command center. Re-entry into the buildings is not allowed unless authorized by the command center.

Command Center Operations

Those persons designated as responsible for making emergency decisions will evacuate and set up a command center at a predetermined location. Command center employees are responsible for directing and coordinating all emergency response activities at that location. The command center will serve as the communications center with the Area Office and with walkie-talkie communications within the location. The command center will determine if the buildings can be re-entered.

Revised 10/25/13

Fire Suppression/Utility Maintenance/Security

Members of the Fire Suppression/Utility Maintenance/Security Team will respond immediately after the shaking has stopped. Team members must have immediate access to tools and their personal protective equipment. In the event of a major quake, the team has the primary responsibility of turning off any natural gas and fuel oil lines to the buildings and for the suppression of small fires. The team may also turn off ruptured water lines to prevent excessive water damage.

Team members will secure the buildings and restrict unauthorized entry by workers and members of the public. Dangerous areas will be isolated with hazard tape to prevent unsafe exposures.

In the event a fire sprinkler head goes off, and there is no evidence of a fire in any part of the building, the team, at the direction of the command center, may unlock and shut the sprinkler system off at the main riser to replace the sprinkler head. When the head has been replaced, the system must be reopened and locked in the open position.

The team will provide the command center with a preliminary assessment of damages to the buildings and the status of utility services.

Search and Rescue

During the evacuation, the Search and Rescue Team will provide evacuation assistance where needed. After the initial evacuation, the team will report to the command center and, if directed, will re-enter with the proper equipment to search for any students or employees reported as missing or to assist those reported as injured or trapped.

Emergency First Aid and Psychological Assistance

Employees identified as members of the First Aid Response Team should set up a treatment area near, yet somewhat isolated, from the location's assembly area.

Team members should be responsible for delivering the location's emergency supplies and equipment to the assembly area. In addition to other emergency supplies, the emergency container shall include most of the supplies necessary for emergency first aid assistance.

All projects are required to have at least one first aid trained employee.

The team should inform the command center of any serious injuries requiring immediate medical attention. The command center will attempt to reach public emergency response services or determine alternative actions to attend to those seriously injured.

A member of this team should also have the responsibility and skills to provide psychological assistance as needed. This member should also be bilingual at project locations with a large number of non-English speaking workers.

Appendix O:

SAFETY VIOLATIONS POLICY

PURPOSE:

The purpose of this policy is to assist TURNER Supervisors in the uniform application of disciplinary action for violation of Health and Safety rules, and to facilitate a disciplinary system that is fair and consistent.

POLICY:

It is TURNER's goal to maintain a safe workplace for our employees. Therefore, violations of TURNER's IIPP policies and procedures and standard safe work practices will not be tolerated. Supervisors are responsible for and shall be held directly accountable for the safety performance of their subordinates. Supervisors must accept the responsibility of discipline for their subordinates. All employees have equal authority and responsibility to correct an unsafe act and/or condition. Any employee observing a policy violation, or unsafe act/condition, shall take immediate corrective action.

Only Project Safety Managers, Supervisors, Safety Managers or above may administer disciplinary action that involves discipline that exceeds an oral warning. Subordinates being disciplined shall be initially disciplined by his or her direct supervisor. Supervisors are expected to use reasonable judgment in applying the guidelines outlined below. Methods of discipline available to the supervisor consist of:

- a) Oral Warning with Documentation
- b) Written Warning
- c) Time Off Without Pay
- d) Probation
- e) Termination of Employment

All final decisions relating to disciplinary action shall be the responsibility of the Project Manager and Business Unit Safety Director. Whenever a decision has been made to take disciplinary action that requires more than a one shift suspension, the Manager shall be contacted prior to informing the involved employee. The Manager will advise the Supervisor of the proper method of administering discipline. If the Manager is not available, the Supervisor may suspend the employee and inform them to contact the Manager for an interview.

Introduction to Disciplinary Action Guidelines:

It is not possible to list all the potential violations of Health and Safety Rules. The following list is an effort to provide the Supervisor with an overview of potential violations and recommended progressive disciplinary action for employees violating Health and Safety rules. For violations that are not listed, use reasonable judgment and/or seek advice from the Project Manager, or the Business Unit Safety Director/Site Safety Manager, prior to taking action. Depending on circumstances,

any violation can result in disciplinary action that is stricter or more lenient than the listed recommendations.

Remember to follow established company disciplinary action policies and procedures. The Safety Manager must document all events, interviews, witnesses etc. Any disciplinary action must be documented on the TURNER Safety Violation Form. The employee's past performance must be considered in determining appropriate level of progressive discipline, i.e. if the violation is a second or subsequent event, progressive discipline should be elevated. The form must be signed by the employee and others involved in the process. Should the employee refuse to sign, note that in the employee signature box. Forward copies of all documents to the Project Manager and Business Unit Safety Director.

Safety violations of Turner Construction Company or federal, state and local laws will result in disciplinary action to the worker and/or subcontractor in violation. Disciplinary actions will follow progressive steps: documented verbal warning, written warning, monetary fine, suspension from project for up to one week and removal from the project.

Disciplinary Action Matrix:

The ***Offense/Fine System*** (following) states the disciplinary action and monetary fine attached to each violation for subcontractor workers as well as Turner Construction Company employees.

The ***Safety Violation Written Warning/Fine*** (following) is to be used with each violation whether fines are attached or not.

Three safety violations involving one contractor will result in written communication by the Project Manager to the subcontractor. The subcontractor will be required to respond, in writing, stating the corrective actions that will be taken to correct the violations. If another similar violation is reported, the Turner Project Manager, Safety Director, Safety Manager, subcontractor Project Manager, Safety Director, Safety Manager will be required to meet, on-site, to discuss the corrective actions. Corrective actions may include removal of the worker and/or subcontractor supervision, company probation, suspension, or barring.

If the Turner Construction Company Project Manager is aware of any noncompliance with safety requirements or is advised of such noncompliance, the following may occur:

- A. Project Manager can deny any claim or request from the subcontractor for equitable adjustment for additional time or money for suspension work for the unsafe circumstances.
- B. Any worker removed from a Turner project will not be hired to work for ***any*** other subcontractor working on a Turner site for a minimum of one year from the date of removal without specific approval of the Safety Director

DISCIPLINARY ACTION MATRIX

Focus Point /Incident	1 st Violation	2 nd Violation	3 rd Violation	NOTES
WORKER	Verbal & Written Notice	3 Days Off	Removed From Turner Projects For One Year	
WORKER'S DIRECT FOREMEN	Written Notice	Written Notice	3 Days Off	3 Worker Lay-offs = Removal From Projects For One Year
WORKER'S DIRECT SUPERINTENDENT	Written Notice	Written Notice	Written Notice to Sub/Prime Superintendent and President of Sub/Company	3 Worker Lay-offs = 3 Days Off For Superintendent
PRIME CONTRACTOR'S SUPERINTENDENT	Written Notice	Written Notice	Written Notice to President of Prime Company	3 Worker Lay-offs = 3 Days Off For Superintendent+

FFENSE/FINE SYSTEM

Offense	Turner Employees	Subcontractor Employees
1. No Hard Hat, Safety Glasses, Gloves, Or Work Boots	1 st Offense: Verbal Warning 2 nd Offense: removed from project for 1 week 3 rd Offense: Not Allowed To Work On Project For 2 Weeks Subsequent Offense: Discharge	1 st Offense: Verbal Warning 2 nd Offense: Written Warning Plus \$200.00 Fine 3 rd Offense: Not Allowed To Work On Project For 2 Weeks Subsequent Offense: Discharge
2. Remove Guardrail Without Adequate Replacement	1 st Offense: remove from project for 1 week 2 nd Offense: Discharge	1 st Offense: \$500.00 Turner Fine 2 nd Offense: Discharge
3. Remove Opening Protection Without Adequate Replacement	1 st Offense: remove from project for 2 weeks 2 nd Offense: Discharge	1 st Offense: \$1000.00 Turner Fine 2 nd Offense: Discharge
4. Unsecured Compressed Gas Cylinders	Turner To Confiscate And Remove From Site Plus \$500.00 Turner Fine	
5. Improper Storage of Flammable Materials	Turner To Confiscate And Remove From Site Plus \$500.00 Turner Fine	
6. No Fire Watch	1 st Offense: remove from project for 2 weeks 2 nd Offense: Discharge	1 st Offense: \$1000.00 Turner Fine 2 nd Offense: Discharge
7. Open Electric Panels	N/A	1 st Offense: \$1000.00 Turner Fine 2 nd Offense: Discharge
8. No Fall Protection or Inadequate Fall Protection	1 st Offense: Discharge	1 st Offense: \$5000.00 Turner Fine and Discharge
9. Late Reporting of Injures (Beyond 24 Hours)	N/A	1 st Offense: \$1000.00 Turner Fine 2 nd Offense: Discharge
10. Other Serious or Life-Threatening Violations	1 st Offense: remove from project for 2 weeks 2 nd Offense: Discharge	1 st Offense: \$1000.00 Turner Fine 2 nd Offense: Discharge
11. Other Non-Serious Violations	1 st Offense: remove from project for 1 week 2 nd Offense: Discharge	1 st Offense: \$200.00 Turner Fine 2 nd Offense: Discharge
12. Improper Rigging/Crane Use	1 st Offense: remove from project for 2 weeks 2 nd Offense: Discharge	1 st Offense: \$1000.00 Turner Fine 2 nd Offense: Discharge
13. No GFCI protection	1 st Offense: remove from project for 1 week 2 nd Offense: Discharge	1 st Offense: \$500.00 Turner Fine 2 nd Offense: Discharge
14. No protection from rebar (and other) impalement hazards	1 st Offense: remove from project for 1 week 2 nd Offense: Discharge	1 st Offense: \$500.00 Turner Fine 2 nd Offense: Discharge
15. Improper disposal/storage of Powder Actuated Tool cartridges	1 st Offense: remove from project for 1 week 2 nd Offense: Discharge	1 st Offense: \$500.00 Turner Fine 2 nd Offense: Discharge
16 Improper Ladder Usage	1 st Offense: remove from project for 2 weeks 2 nd Offense: Discharge	1 st Offense: \$1000.00 Turner Fine 2 nd Offense: Discharge
17 Lock Out Tag Out	1 st Offense: remove from project for 2 weeks 2 nd Offense: Discharge	1 st Offense: \$1000.00 Turner Fine 2 nd Offense: Discharge



Fine ☐ **Yes** ☐ **No**

Specify Below

SAFETY VIOLATION

Inadequate Personal Protective Equipment	<input type="checkbox"/>		<input type="checkbox"/>
Failure to Attend Weekly Project Safety Mtg	<input type="checkbox"/>		<input type="checkbox"/>
Failure to Submit Tool-Box-Talks by Due Date	<input type="checkbox"/>	Failure to Wear Fluorescent/Reflective Vest while	<input type="checkbox"/>
Failure to Notify TCCo of Incident/Accident within 24 Hours	<input type="checkbox"/>	Performing Hot Work w/out a Valid Permit	<input type="checkbox"/>
	<input type="checkbox"/>	Failure to Adhere to Environmental Impact Policies & Procedures	<input type="checkbox"/>
Improperly Disposed Powder Actuated Shots	<input type="checkbox"/>		<input type="checkbox"/>
Removing Cables, Barricades, Floor Openings, etc. without adequate replacement	<input type="checkbox"/>	Failure to Adhere to Lock-Out/Tag-Out Policies & Procedures	<input type="checkbox"/>
	<input type="checkbox"/>		<input type="checkbox"/>
Inadequate Electrical Protection for > 50 Volts	<input type="checkbox"/>	Removing an Isolation Device, other than Own	<input type="checkbox"/>
Smoking in an Unauthorized Area	<input type="checkbox"/>	Failure to Adhere to 6' Fall Rule and all other Fall Protection Policies	<input type="checkbox"/>
Failure to Protect Floor Openings/Holes	<input type="checkbox"/>		<input type="checkbox"/>
Failure to Adhere to Confined Space Entry	<input type="checkbox"/>	Other → See Violation Description	<input type="checkbox"/>

VIOLATION DESCRIPTION

Describe the specifics of the violation: such as location, employee name (if available), if repeat violation, number of violations,

FineAmount:

\$0.00

Employee Involved (If Applicable)

See attached document and photos.

Signature: _____

Date:

~~Signature:~~
~~Turner Safety:~~

Cc:

SITE DELIVERY / TRAFFIC CONTROL POLICY

PURPOSE

To ensure loading and unloading materials, equipment and products from trucks or similar activities are proactively managed to reduce or eliminate potential risk.

These procedures apply to all subcontractors (including lower tiers) and vendors on Turner projects where maneuvering around, loading and unloading of trucks or similar vehicles may be performed, and are intended to supplement, not replace the appropriate OSHA Standards or applicable Turner Construction Company Safety procedures. All applicable regulations within these standards shall be followed.

PROCEDURES

All subcontractors and sub tiers delivering material, products or equipment will be required to complete a risk assessment and Pre-Task Plan (PTP) that must be performed prior to any loading/unloading activities commencing. **This includes:**

- The subcontractor ensuring a risk assessment and preplan is conducted.
- The risk assessment is completed prior to any work being conducted on the site with Turner Safety or Superintendent, and if high risk activities are identified, then no work should be completed until measures are taken to reduce or eliminate the risk.
- All personnel involved with a loading or unloading operations should assess the potential hazards before the operation begins. A clear understanding of the procedures and communication between workers (immediate and surrounding areas) must be established.
- The project shall maintain a current site logistics plan identifying Controlled Access Zones (CAZ) for truck loading and unloading, required traffic controls. Logistics plans must be updated regularly to reflect evolving conditions.

The PTP should include, but is not limited to:

- Accessing the site.
- Parking trucks safely and fully engage the parking brake when temporarily parked or during loading and unloading.
- Lighting is adequate for the work; if lighting is not adequate, the operation cannot move forward.
- Unloading procedures are clear and defined.
- The right equipment is chosen for the task.
- Reporting procedures are in place for reporting incidents and near misses.
- Ensuring documentation is shared with Turner supervision.
- How all personnel involved including delivery driver will be briefed on loading/unloading procedures and understand their responsibilities.
- Overhead power lines.

Revised 4/2/14

Minimum Personnel Protective Equipment/Measures:

- Minimum PPE required of driver before exiting the cab are hard hat, safety glasses, gloves, high visibility vest, and sturdy leather shoes.
- High visibility vests must be worn by all personnel associated with the loading / unloading operations.
- All personnel working around moving vehicles and mechanized equipment during loading and unloading operations shall wear hard hat, safety glasses, gloves, high visibility vest, and sturdy leather shoes.

Safe Zone for Waiting:

- A place for the delivery driver to wait during loading / unloading operations will be provided.
- Driver must be in full view to personnel loading / unloading the truck at all times. All loading or unloading activities must stop if the driver is not visible to personnel or needs to enter to zone to inspect the load.
- Alternatively, if safe to do so, the operation can allow the driver to stay in the truck cab during loading and unloading.

Restricted Access Zone (RAZ):

- A restricted access zone (RAZ) must be established around the truck to prohibit entry into the loading/unloading area.
- Red barricade tape should be used to identify the restricted access zone and signage shall be posted that states "DO NOT ENTER".
- No worker, except those involved in the loading/unloading operations shall be permitted to be within the identified restricted access zone. Signs and barricades must be erected to communicate restricted access to the area.
- The zone must be equal to the area needed to load / unload plus ten (10) feet around the entire truck area.
- All personnel within the zone must be clear of the load during all loading or unloading operations by at minimum 10 feet.
- A qualified "spotter", wearing an ANSI approved high visibility traffic vest, must be utilized during loading / unloading operations. Vehicles must never back up "blind" on a Turner project.
- Workers on the ground within the zone should never be on the opposite side of the truck from the hoisting equipment loading or unloading materials, product or equipment.
- A rigging plan must be in place and qualified riggers present when hoisting material.
- Workers on top of the truck while equipment is loading or unloading is prohibited unless the operation requires it, then a competent person is the only person allowed as described in the PTP.
- An all clear signal (different from the project evacuation signal) must be used before loading or unloading operations begin.

Revised 4/2/14

- All workers in the loading zones should be trained on these safe work practices and given refresher training periodically.

Truck Parking:

- Turn off the vehicle's engine (unless required to remain running to protect the integrity of the load and there is no alternate means to protect the load);
- Engage parking brake and air brakes;
- Leave automatic transmission in park; or,
- Leave manual transmission in the lowest gear;
- The driver shall remove the keys from the vehicle's ignition and keep them in their possession.

Forklift or equipment:

- Fork lift and equipment operators are responsible for the safety of the ground personnel at the site as well as themselves.
- Operators must be trained on safe operation of the equipment, load limits, loading procedures and communication with other personnel.
- All motor vehicles and material handling equipment, should have an obstructed view to the rear, must have a reverse signal alarm audible above surrounding noise.
- Forklift operator training records must be available for audit purposes. The forks cannot be used for free rigging (straps or slings over forks).
- Loads must never be swung over workers or the general public.

Inspections:

- All rigging materials must be inspected prior to commencing.
- Drivers should visually inspect the area around the truck before moving to assure all workers are clear prior to moving the truck.
- The vehicle must be equipped with a functioning audible alarm when placed in reverse.

General Site Requirements:

- Seat belts are to be worn in all vehicles.
- Cell phones shall not be used while driving any vehicle on site.
- Never exceed the designated passenger limits for any vehicles.
- Drivers on site must obey all posted traffic signs and be alert for other vehicles and pedestrians.
- Stop for pedestrians on the crosswalk, and areas throughout the project as they have the right of way.
- Driver will coordinate with the Sub Contractor or Turner Construction to learn of onsite hazards or obstructions to ensure the delivery vehicle may travel safely on site.
- Vehicles must not block emergency egress, vehicle access (i.e. gates), or electrical panels. All vehicles in violation will be towed at the owner's expense.
- All delivery vehicles are required to have a back up alarm and a flagman.

Revised 4/2/14

- Park in designated parking area only.
- Dispose of all trash in proper receptical.
- Do not leave packaging material, pallets, banding or any other debris on the ground.

Traffic Control:

- When operations are such that signs, signals, and barricades do not provide the necessary protection on or adjacent to a highway or street, formally Qualified (Trained) flagmen, or other appropriate traffic controls shall be provided by the Contractor completing the operation. The contractor shall provide qualified flagmen and applicable training in writing to Turner upon request.
- Signaling directions by flagmen shall conform to the latest American National Standards Institute (ANSI) standards.
- Hand signaling by flagmen shall be by use of red flags or sign paddles, and in periods of darkness, flash lights. All safety vest on the site either for exposure to vehicular traffic or flaggers must use ANSI Class 3 vests.
- All Contractors receiving materials are solely responsible for the traffic control and spotters during the loading / unloading processes as identified herein and shall provide the necessary personnel to complete such tasks.
- Workers shall maintain a minimum 10' distance from operating equipment at all times unless critical to the task.

Revised 4/2/14

Appendix Q:**SWPPP WATER MANAGEMENT & SPILL POLICY****PURPOSE**

The purpose of the Turner Construction Company Waste Water Management Policy is to support the requirements of the site specific Storm Water Pollution Prevention Plan (SWPPP), Storm Water Management Plan (SWMP) and/or Project Pollution Control Plan. These requirements have been established to comply with National Pollutant Discharge Elimination System (NPDES) General Permit, applicable federal, state, and local laws, regulations, standards and requirements; and project and site specific Turner Construction Company standards and requirements.

For the purposes of Storm Water Management, construction is considered to be engaging in industrial activity (except for operations that result in a total disturbed surface area of less than 1 acre, which are not part of a larger common plan of development).

APPLICABILITY

The Waste Water Management Plan applies to all Turner Construction Company subcontractors involved in activities that result in the generation of wastewater or the discharge of storm water associated with these activities at the project site. It is the expectation that each project will follow the site Master Plan and incorporate any federal, state, laws, property sale agreements (e.g. warranty deeds) and/or local ordinances as necessary into the project (e.g., tree mitigation measures, endangered species concerns, storm water easements etc.).

Each Subcontractor will be responsible for the wastewater from construction and build-out related activities that are contractually their responsibility. Turner may be contractually responsible as the “operator” for the management of all storm water discharges in compliance with the provisions of the Clean Water Act at the project site.

In the event of conflict between Turner requirements, contract documents and/or the SWPPP, the documentation submitted for the NPDES permit shall apply.

Spill Prevention Control Policy**Policy Statement**

As the leader in the construction industry, Turner Construction Company is committed to the prevention of unwanted chemical releases, specifically related to potential entrainment into ground water sources. It is our intention to provide and maintain the best possible work conditions to ensure the minimization of potential spills. This will be achieved through the continued implementation of our Spill Prevention Control Plan (SPCP). By promoting safe and efficient production and by minimizing all incidents that could increase cost to the project and potentially impact the environment. It is our belief that with complete cooperation from all workers, the SPCP program will continue to achieve commendable results.

This Spill Prevention Control Plan has been prepared by Turner Construction Company to assist projects in managing hazardous substance spills including, but not limited to, oil and other petroleum products. The SPCP is to be used to inform contractors of the potential hazardous materials, contamination prevention measures, emergency spill response, and responsibilities associated with hazardous materials during construction.

II. Procedures

1. Spill Prevention & Containment Measures

The number one defense against a spill is prevention. The easiest way to prevent spills is to: conduct proper vehicle maintenance and inspections; never place vehicles or equipment in or near sensitive environments; store all materials in protected and approved areas; store all chemicals in approved and labeled containers and follow the OSHA hazard communication standard / GHS; and train workers on the proper storage, handling and treatment of all hazardous chemicals on the project.

This section identifies the types of secondary containment or diversionary structures that will be used to handle spill sources.

- a) Contaminated Soil: An equipment leak from a fuel tank, equipment seal, or hydraulic line will be contained within a spill pad placed beneath potential leak sources. An undetected leak from parked equipment will be contained within the equipment staging area by removing the soil to a drum using a shovel or by installing a temporary berm.
- b) Equipment Staging Area and Material Staging Area: An equipment leak from a fuel tank, equipment seal, or hydraulic line will be contained within a spill pad placed beneath potential leak sources. An undetected leak, from parked equipment will be contained within the equipment staging area by removing the soil to a drum using a shovel or by installing a temporary berm.
- c) Fuel Staging Area: A spill during fueling operations will be contained within a spill pallet for small container handling or secondary containment berms. The transfer of fuel into portable equipment will be performed using a funnel and/or hand pump and a bucket or containment pan will be placed directly underneath the fueling operation to prevent any incidental spills or drips. A spill response kit will be located near the fueling area for easy access. The spill response kit will include plastic sheeting, tarps, absorbent pads, Lite-Dri absorbent (or equivalent) and shovels.
- d) Unknown soil and groundwater contamination: When contaminated soil is encountered, refer to the Environmental Policy section of the Safety, Health and Environmental Policy.
- e) Underground pipelines: If a leaking underground pipeline is encountered, the leaking material will be contained within the excavation. Turner Project Staff will contact Risk Management immediately.

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Roles and Responsibilities

1. A project specific Spill Prevention Plan shall be developed and posted in the project Trailer prior to mobilization. A comprehensive sample Spill Prevention and Control Plan is available in Appendix C of this manual. This plan shall include the following:
 - a) Roles Responsibilities for Owner, Turner, Subcontractors, and Vendors.
 - b) Formal inspection protocol and archiving procedures.
 - c) Emergency procedures following a spill.
 - d) Spill Containment Equipment List & Sourcing information.
 - e) Local Emergency Response Contact Information.
 - f) Project Specific Hazardous Materials Communication.
2. The project specific Spill Prevention plan shall be communicated to all Turner Project staff and key subcontractor personnel.

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WEATHER PROTECTION – MOLD POLICY

This Weather Protection policy outlines the steps that will be taken during the construction of the project to eliminate water intrusion into the building and to control the water in surrounding site areas.

The plan is broken down into the following areas:

- General
- Site
- Exterior Wall
- Roof
- Interior
- Mold Prevention

Many of the action steps noted below have been incorporated into the subcontract agreements. The balance of the action steps will be funded from labor/material allowances included in the subcontracts, or as change orders to the direct cost line items.

General:

- Weather will be tracked from a site on the Internet. 10 day weather reports will be posted for all parties to review so that verbal and written warning of all weather will be handled properly.
- The weather protection measures/work put in place will be inspected and monitored by all field staff. Special inspections will be conducted when storms are predicted.
- A stockpile of visqueen and sandbags will be maintained on site.
- Where applicable, the subcontractor's weather protection plans will be reviewed and implemented, if not already included in this plan.
- Rental equipment accounts will be established ahead of time so that equipment is readily available. Some equipment (pump/hose) and tools will be purchased and stored on site.

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Site:

- The area immediately surrounding the building will be sloped away from the slab-on-grade so that water cannot flow into the building.
- The site storm drain system is installed and connected to the mains. Temporary catch basins, with gravel and sandbag protection, will be spaced throughout the site to drain the rain water.
- Exterior storage of vulnerable (drywall, wood, door frames, etc.) materials will not be permitted.
- Sandbags are placed and will be maintained at the site fence perimeter to channel surface water away from the site and into the storm drains.
- A stockpile of extra sandbags will be maintained.
- A mud slab will be placed, prior to setting of scaffold, between the Data Center building and any existing building. The area drains will be temporarily set at this elevation.

Exterior Wall:

- Windows, or other systems requiring caulking, are to be caulked/sealed as they are installed (vs. waiting for an entire bay/floor/elevation to be installed before starting caulking).
- The exterior closure assembly at the high bay plenum shall be a priority to avoid water infiltration. The CIP curb installation around the perimeter of the plenum opening shall defer roof discharge into building. A monolithic pour of the CIP curbs and roof deck is preferred. Extreme emphasis on completing the exterior framed wall and sheathing shall drive the ability to start the interior high bay plenum drywall.
- All mechanical openings penetrating the high bay plenum exterior wall will be temporarily enclosed with temporary window-like (wood frame/visqueen) inserts to avoid driving rain infiltration until final construction is installed and sealed.
- Exterior wall hold-out bays in the pre-cast assembly shall not prevent the roofing installation. As hold-outs are defined and required, a complete roof installation shall be required per the project schedule with temporary roof

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provisions to address the hold-out panels. Turner shall be responsible to provide final roof transitions at the hold-out panels once erected.

Roof:

- The roof drain risers will be installed as the concrete floors are placed, ahead of fireproofing if necessary, and will be tied into the storm drain system. The roof drains will be piped immediately after placement of the roof concrete decks. If necessary, the roof overflow/scupper system can be utilized to get water off the roof.
- The modified bituminous membrane roof system will be installed as soon as allowed by the manufacturer after the roof concrete deck is poured, prior to installation of the mechanical systems on the roof.
- All roof shaft openings, mechanical penetrations/openings, skylights, etc. will be covered with removable plywood and plastic sheeting. Concrete curbs will be installed around all roof openings and waterproofed.
- Any exposed portions of the exterior mechanical equipment will be protected during installation.

Interior:

- Drywall will not be stocked or installed until the exterior wall in the area of the work is in place and all adjacent/overhead openings (shafts, skylights, etc.) are covered. Turner will inspect and release drywall for stocking/installation on an area-by-area basis.
- At leave out bays for hoisting, manlifts, ventilation, etc., drywall is not to be stocked or installed where it could possibly get wet.
- Interior water sources, such as temp. hose bibs or cleanout barrels will not be installed inside the building.
- Pipe testing operations that require water will be monitored and any spillage cleaned up immediately. Air will be utilized for testing where feasible.
- Moisture resistant shaft wall will be installed.

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- All through the floor shafts and penetrations will be surrounded by a CIP curb so that in the event water does get into the building, it does not get into the shaft or floor below.
- When/if drywall gets wet it will be removed. The source of the water will be identified and contained prior to further drywall installation.
- When/if the floors get wet, they will be dried up immediately (squeegee, fans, mops, etc.).
- All drywall will be installed a 1/4" to 1/2" off the floor.

Mold Prevention:

Mold prevention starts with keeping water/moisture out of the building and keeping the construction materials dry. Additionally, the following steps will be taken to assure a mold free building:

- When/if drywall, ceiling tile, and other mold sensitive materials gets wet, they will be removed and replaced, after the source of the water is identified and contained.
- The moisture content of in-place CMU block will be measured. The waterproofing of the block will not be installed until the block is dry enough to satisfy the waterproofing manufacturer's requirements.
- The HVAC system (supply side only) will be started as soon as possible and unconditioned air will be distributed throughout the building. This will keep the building under a positive pressure and help dry out the concrete floors, drywall taping/coating and other construction materials.
- The coils and filters at the main air handling units will be protected and filtered during construction. The coils and final filters will be certified clean before turnover to the Owner.

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Policy Statement

Turner is not in the business of performing mold abatement or remediation work.

Turner Construction Company's Mold Taskforce was established to develop suggested practices to assist and provide guidance to the Business Units in connection with possible mold contamination. The taskforce has developed specific protocols to guide Turner Project Staff regarding mold, including the remediation process. All documents and forms are located in the Claims & Legal folder on the TKN Document Management System (TKN/Claims & Legal/Site Documents/Policy & Guideline /Business Unit Mold Suggested Practices).

The suggested practices begin once mold has been detected in the building and continue through complete remediation. The key to these practices is rapid response with prudent and reasonable judgment made depending on each situation.

Procedures

1. Initial Identification and Assessment – Once mold has been discovered, the business unit is to investigate, document and identify the problem and assess the magnitude of the situation. **An initial call must be made to The Business Unit Safety Director and Claims Manager.**
2. Notification – All communications shall be legally protected by addressing the correspondence to Peckar & Abramson and copying only those with a need to know.
3. Remediation Evaluation – Working in conjunction with Turner Risk Management the project team and Operations Manager should determine the level of remediation needed and the need for external expertise.
4. Evaluate Responsibility – It is critical that the source of the mold is determined and a root cause is identified. The Project Team, Operations Manager, and Turner Risk Management will determine what caused the mold contamination and what parties are responsible for the remediation.
5. Parties on Notice – As soon as reasonably possible, the BU Claims Manager shall place the culpable parties on notice. Refer to Turner's Purchasing Manual for guidance in 24 hour and 3-day notice letters per Subcontract Form 36. The Project Manager must notify the subcontractor that Turner is proceeding to have the mold problem corrected and that the subcontractor will be held accountable for the cost. Specific details can be found in the Claims and Legal folder on TKN titled "Tender Letter Protocol for Mold" (TKN/Claims & Legal / Site Documents / Correspondence / Mold

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Tender Letter). This document provides guidance on how to protect our interest relative to contractual indemnification and additional insured status.

6. Crisis Management – Depending on the extent of contamination, there may be a need for public relations involvement to minimize exposure.

7. Remediation Protocol – The Project Team manages the remediation of the mold with either a consultant and / or remediation contractor. **Specific details can be found at the Claims and Administration & Programs Mold and Moisture Remediation Policy**

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STRETCH & FLEX

Scope and Application

In an effort to reduce the number of soft tissue injuries, each Trade Partner/Subcontractor shall develop and provide to Turner Construction a plan to implement a daily stretch and flex program. The program must take place daily at the start of the shift. The Turner Construction's Project Safety Manager/Superintendent will periodically attend the Contractor's meetings to ensure their effectiveness. Below is a sample Stretch and Flex program that might be used; however, a final program and plan must be submitted by each Trade Partner/Subcontractor to Turner Construction.

NOTE: Discontinue any stretches that cause pain.

Side bending Stretch



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Hamstrings Stretch



Step forward with one foot.
Raise toes, straighten knee, bend forward from the waist. Hands on your thigh.
It is very important to keep your back straight, look straight ahead, not down at the ground.
There should be a slight ache in the low back.
Stop when you feel a stretch in the back of your thigh. Hold for 15 seconds. Repeat 5 times, each side.
Discontinue the exercise if you feel any discomfort in your low back.

Back Extension



Stand with feet shoulder width apart.
Put hands on hips. Move your hips forward and lean back.
Hold for 5- 10 seconds.
You may feel a slight pressure in the center of the low back.
This pressure should go away when you straighten up.
Stop if you feel pain in the low back or pain shooting into your buttocks or leg.

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Achilles Stretch



Step forward, put your weight on the forward foot.
Forward knee slightly bent. Move your body (hips) forward.
Press down with the heel of the back foot.
You should feel the stretch in the back of the back calf.
Stop when you feel the stretch. Hold for 15 seconds.
Repeat 3 times, each side.

SHOULDERSTRETCH



Raise arms overhead. Grab elbows. Pull elbows side to side. Keep body stable.

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EMERGENCY MEDICAL PROCEDURE

RESPONSIBILITIES:

1. Turner Construction Company shall be notified **immediately** after any form of incident on the project and the subcontractor shall submit their report to Turner within 4 hours.
2. Provision shall be made by Turner Construction Company (CCIP) and Subcontractor (OCIP) for immediate first aid and medical treatment for all work related injuries and illnesses.
3. In order to provide the highest level of care, contractors shall not use any medical provider that has not been approved by Turner Construction and or their insurance carrier.
4. Contractors will provide a **Modified Light Duty Policy**. Each Contractor will submit their policy prior to the commencement of work.
5. Contractors shall be individually responsible for notifying OSHA within eight (8) hours in the event of a fatality or a single incident in which one (1) or more employees are hospitalized.
6. Any employee who is involved in an incident in the course of their job duties, which results in an injury or property damage will be subject to a post incident drug test.
7. If A Member of the Public Is Injured, Turner Construction Company shall be notified **immediately**.
8. Contractors shall be individually responsible for providing one person with first aid /CPR training in attendance at all times when workers are onsite.
9. Contractors must provide sufficient first-aid kits and supplies as required by 1512(c)-CAL OSHA.
10. Contractors shall train all their crews on the emergency procedures for the project to include what to do in case of injury or illness. Turner Construction will post information at the field office for reference and shall note physician, hospitals, ambulance services, fire-protection services.
11. If the project is over five floors or 48 feet or more either above or below ground, a basket will be present onsite as part of the emergency equipment.
12. Emergency washing facilities will be provided by every contractor when the eyes or body of any person may be exposed to injurious or corrosive materials and shall be near and readily accessible.

ACTIONS:

1. Immediately notify the Turner project Superintendent or Safety Manager.
2. Give the exact nature of the emergency (i.e. broken leg, fire, etc).
3. Give the exact location by area column or other easily recognizable terms.
4. Remain on the phone, if used, until Turner has confirmed the information given.
5. If an evacuation is not required, remain on the scene to brief emergency personnel upon their arrival.
6. Secure the area

Appendix U:

INJURY & ILLNESS PREVENTION PROGRAM REQUIREMENTS

The following represents an overview of the Cal/OSHA requirements for an Injury & Illness Prevention Program as presented in this Manual

IN COMPLIANCE WITH

TITLE 8 INDUSTRIAL RELATIONS GENERAL INDUSTRY SAFETY ORDERS

SECTION: 3203 INJURY & ILLNESS PREVENTION PROGRAM

California Legislation requires all employers to establish and maintain an effective injury and illness program. The program must be in writing and must include specific elements as codified in the General Industry Safety Order and the California Labor Code. The requirements of an effective injury and illness prevention program are:

- **Responsibility** - Identification of the person(s) responsible for implementation
- **Hazard Assessment** - A system for identifying and evaluating workplace hazards, including scheduled periodic inspections to identify unsafe conditions and unsafe work practices
- **Hazard and Instruction** - Methods and procedures for correcting unsafe and unhealthy conditions and work practices in a timely manner
- **Training and Instruction** - A training program designed to instruct employees in general safety and health work practices upon hiring, and throughout the scope of their employment, and when new programs, processes or job descriptions change, when new substances, processes, procedures, or equipment is introduced which represents a new or previously recognized hazard, and whenever a new unrecognized hazard is identified.
- **Communication** - A system for effectively communicating with all employees regarding safety and health issues, including provisions designed to encourage employees to inform management of hazards at the worksite without fear of reprisal
- **Compliance** - A system for ensuring that employees fully comply with safe and healthful work practices, which may include disciplinary action to assure compliance
- **Accident Exposure/Investigation** - A system or procedure to investigate occupational injuries and/or illnesses and implement appropriate corrective action.
- **Record Keeping** – Safety Manager is responsible for Maintaining records of steps taken to implement the safety program.

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Turner Construction Company INJURY & ILLNESS PREVENTION PROGRAM Southern California Business Unit/San Diego Business Unit

1. POLICY STATEMENT

Turner Construction Company has developed and implemented this *written INJURY & ILLNESS PREVENTION PROGRAM (Safety Program)*. The work performed by Turner Construction Company is varied, in both nature and location. Under all circumstances, it is the intent of Turner Construction Company to: (1) provide a safe and healthful environment for our employees and subcontractors and (2). Comply with the requirements and intent of *California Code of Regulations, Title 8*, accordingly, effective July 1, 1991; Turner Construction Company has implemented this Safety Program in compliance with *Senate Bill 198, encoded as Labor Code 6401.7 (SBI98)* and the *California Code of Regulations (CCR), Title 8, Section 3202*. The safety of our employees and subcontractors is our paramount concern, and we urge all employees and supervisors to familiarize themselves with the Safety Program set forth in this manual. Turner Construction Company expects and requires all employees and subcontractors to follow the requirements set forth in this Injury & Illness Prevention Program.

Title 8 of the California Code of Regulations, consist of the following listed eight elements and are included in this section.

- Responsibility
- Compliance
- Communication
- Hazard Assessment
- Accident/Exposure investigation
- Hazard Correction
- Training and Instruction
- Recordkeeping

BASIC OBJECTIVE:

1. Provide a Safety Program consistent with good construction practices.
2. Reduce the number of injuries/illnesses to an absolute minimum.
3. Create an attitude of safety consciousness in general management, field supervision and all employees.
4. Provide for assignment of specific responsibilities for effective implementation and continuation of Turner's Safety Program.
5. Provide a basis for continuing Safety education and training.

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IN ORDER TO ACCOMPLISH THESE OBJECTIVES, OUR INJURY & ILLNESS PREVENTION PROGRAM INCLUDES;

I. Pre-planning for injury/illness prevention in Turner Construction Company's operations through analysis of tasks performed.

1. Utilizing management experience and expertise to anticipate and mitigate or eliminate potential hazards.
2. Ensuring that mechanical and physical safeguards are provided.
3. Conducting a program of safety inspections to identify and correct any potential unsafe working conditions or practices.
4. Training all employees in good safety practices.
5. Providing and enforcing the use of necessary personal protective equipment.
6. Developing and enforcing safety rules and requiring that all employees and subcontractors adhere to these rules as a condition of employment.
7. Investigating every incident promptly to find its cause and take any corrective action needed to prevent recurrence.

II. PERSONS WITH RESPONSIBILITY/AUTHORITY FOR IMPLEMENTATION

The position with *overall technical responsibility and authority for implementing* Turner Construction Company's Injury & Illness Prevention Program (Safety Program) is:

Safety Director, Anaheim Business Office 714-940-9000
Safety Director, San Diego Business Office 858-337-9498
Safety Director, Arizona Business Office 480-557-4716

The person with ***overall responsibility and accountability for this Project's Injury & Illness Prevention Program*** is the **Project Manager** (see Section 1, Site Specific Information)

All employees, supervisors, and managers are responsible for assisting and supporting in this collective effort. If any worker is aware of an unsafe or hazardous condition, it must be brought to the immediate attention of a supervisor or other management person immediately. Only through a team effort of all employees can Turner maintain a safe work environment.

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RESPONSIBILITIES

MANAGEMENT

The ultimate responsibility for implementation and administration of the Safety Program for Turner Construction Company employees and subcontractors rests with Business Unit Management, from the General Manager to field supervision. These specific areas of responsibility are as follows:

1. Actively participate in the development, establishment and implementation of an effective Safety Program.
2. Assign appropriate persons to administer and enforce the program.
3. Periodic review and evaluation of incident records.
4. Periodic field inspections to assess safety compliance.
5. Periodic participation in safety meetings.
6. Set policy for the hiring and training of new employees.
7. Give continuing strong support to all safety policies, procedures and incentives to ensure that employees work in a safe and healthful manner.

The Injury and Illness Prevention Program administrator, David McGee Director, Safety and Health has the authority and responsibility for implementing the provisions of this program for Turner Construction Company.

All Turner Construction managers and supervisors are responsible for implementing and maintaining the IIPP Program in their work areas and for answering worker questions regarding the IIPP Program. A copy of this IIPP Program is available from each Turner Manager and supervisor.

This **Business Unit Safety Director** has been identified by Management to have the authority and responsibility for:

1. Assisting Project Management in establishing and maintaining an effective Injury & Illness Prevention Program (Safety Program) by:
 - a) Developing techniques, ideas and topics for presentation of the Safety Program to all employees at all levels.
 - b) Acting as liaison between field management, supervisors, the work force, regulatory agencies, and insurance carrier(s).
 - c) Ensuring that incidents are reported and investigated promptly and that corrective action is taken.

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- d) Providing office and field personnel with current information at monthly safety meetings.
2. Providing guidance to supervisors in enforcement of the Safety Program including being available for consultation.
3. Informing management of incidents, incident trends, specific problems, and the status of achieving targeted safety goals.
4. Review Incident Investigations to verify that the root causes of the incident are properly determined and any recommendations for corrective actions are implemented. In addition, a file of all incidents will be maintained in order to analyze incident frequencies and trends.
5. Promoting a continuing interest in safety activities through incentive programs, posters, meetings, suggestion boxes, handouts, etc.
6. Ensuring that safety inspections are performed on a regular basis and that necessary corrective actions are taken in a timely manner.
7. Providing a program for disciplinary action for violations of safe work practices/safety policy for all Turner Construction Personnel and all Trade partners, Subcontractors working in a Turner office or at a Turner project.
8. Assisting Turner Construction Company's Designated Project Safety Person/Representative for all OSHA inspections. Representing Turner Construction Company during any REGULATORY ACTIVITY, the Designated Turner Construction Company Project Superintendent shall accompany the Safety Director in any and all regulatory proceedings,

Compliance

Turner Construction Managers are responsible for ensuring all safety and health policies and procedures are clearly communicated and understood by all Turner employees and everyone all Trade Partners/Subcontractors working on Turner projects. Managers and supervisors are expected to enforce the rules fairly and uniformly.

All employees carry the responsibility of implementing, maintaining and enforcing the Safety Program at the Project. The front line supervisor is the Key to the success of any safety program. They have the ability to impact the cause of incidents directly at their level of occurrence.

All employees are responsible for using safe work practices, for following all directives, policies and procedures, and for assisting in maintaining a safe work environment.

Our system of ensuring that all workers comply with the rules and maintain a safe work environment includes:

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1. Informing workers of the provisions of our HIPP Program.
2. Evaluating the safety performance of all workers.
3. Recognizing employees who perform safe and healthful work practices.
4. Providing training to workers whose safety performance is deficient.
5. Disciplining workers for failure to comply with safe and healthful work practices.
6. Accounting for the safety of the employees and subcontractors under their supervision.
7. Promoting safe and productive work methods.
8. Ensuring that employees and subcontractors comply with established safety policies/procedures.
9. Providing proper safety instruction to employees prior to job assignments and any changes to operating procedures.
10. Monitoring of equipment and the work place to assure a safe and efficient environment.
11. Enforcing the use of required personal protective equipment.
12. Assisting in Investigation of Incidents to determine causes and corrective action is taken in a timely manner.
13. Training and safety orientation of employees and subcontractors.
 - a. Understanding requirements of the job. (Knowledge, Physical)
 - b. Proper clothing requirements.
 - c. Proper personal protective equipment.
 - d. First Aid and doctor's treatment.
 - e. Encourage safety suggestions from employees and subcontractors. Ask them to report any unsafe practices, conditions, equipment that may exist.
 - f. Ensure all workers are trained on any hazards or changes within the working environment to include the introduction of new equipment, substances, processes or procedures into the work place.
 - g. All training material/records must be maintained for a minimum of one year after the completion of the project.

Communication

SAFETY ORIENTATION

New Turner Construction Company employees and subcontractors, engaged in labor on Turner Construction Company projects, are trained in the Code of Safe Work Practices and

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other safety procedures by the Site Superintendent or Site Safety Manager. Documentation of receipt of and training in Code of Safe Work Practices is to be completed by each employee on the form provided.

As part of Turner Construction Company's continuing safety education program, Field Supervisors are to conduct tailgate or "tool-box" safety meetings. It is directed that each Superintendent hold regular safety meeting every week (but no more than 10 working days), or, attend other subcontractor safety meetings, or, more often if job site circumstances warrant.

In addition, field supervision will conduct periodic site wide "Safety Stand Downs" to reinforce active participation in, and compliance with Turner's Safety IIPP Program.

CODE OF SAFEWORK PRACTICES (Environmental, Health & Safety Policy)

Turner Construction Company has developed a Code of Safe Work Practices, which sets forth general and specific rules and procedures for all employees. A copy of the Code of Safe Work Practices is given to each new employee and is posted on the Project Safety Bulletin Board at the jobsite.

ENCOURAGEMENT OF EMPLOYEE REPORTING

Turner Construction Company encourages and, indeed, requires all employees to inform any business unit management of any unsafe or hazardous conditions and/or practices. Swat Cards are used to report any unsafe act, conditions observed. These cards may be given directly to a manager or supervisor or deposited in a locked box at the Turner project trailer.

TURNER CONSTRUCTION/SUBCONTRACTOR SAFETY ADHERENCE POLICY - Enforcement Procedures

All Turner Construction personnel and all contractors performing work on Turner projects are subject to the Turner Construction/ Subcontractor Safety Adherence Policy. Disciplinary action can be exercised under this policy for safety non-compliance, failure to implement corrective action in a timely manner, or imminent danger.

SAFETY VIOLATIONS POLICY

PURPOSE:

The purpose of this policy is to assist TURNER Supervisors in the uniform application of disciplinary action for violation of Health and Safety rules, and to facilitate a disciplinary system that is fair and consistent.

POLICY:

It is TURNER's goal to maintain a safe workplace for our employees and all contractors. Therefore, violations of TURNER's IIPP policies and procedures and standard safe work practices will not be tolerated. Supervisors are responsible for and shall be held directly accountable for the safety performance of their subordinates. Supervisors must accept the responsibility of discipline for their subordinates. All employees have equal authority and responsibility to correct an unsafe act and/or

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condition. Any employee observing a policy violation, or unsafe act/condition, shall take immediate corrective action.

The Business Unit Safety Director shall administer disciplinary action that involves Turner Personnel that exceeds a verbal warning. Disciplinary action will be agreed to with Turner's Operation Manager; these actions may involve for 1st offense a verbal warning, 2nd and 3rd offense "1 – 2 week removal from the project and subsequent offense discharge.

The Project Safety Managers, Supervisors, Safety Managers or above may administer disciplinary action that involves discipline that exceeds an oral warning. Subordinates being disciplined shall be initially disciplined by his or her direct supervisor. Supervisors are expected to use reasonable judgment in applying the guidelines outlined below. Methods of discipline available to the supervisor consist of:

- a) Oral Warning with Documentation
- b) Written Warning
- c) Time Off Without Pay
- d) Probation
- e) Termination of Employment

All final decisions relating to disciplinary action shall be the responsibility of the Project Manager, Business Unit Safety Director, and Operations Manager. Whenever a decision has been made to take disciplinary action that requires more than a one shift suspension, the Manager shall be contacted prior to informing the involved employee. The Manager will advise the Supervisor of the proper method of administering discipline. If the Manager is not available, the Supervisor may suspend the employee and inform them to contact the Manager for an interview.

Introduction to Disciplinary Action Guidelines:

It is not possible to list all the potential violations of Health and Safety Rules. The following list is an effort to provide the Supervisor with an overview of potential violations and recommended progressive disciplinary action for employees violating Health and Safety rules. For violations that are not listed, use reasonable judgment and/or seek advice from the Project Manager, or the Business Unit Safety Director/Site Safety Manager, prior to taking action. Depending on circumstances, any violation can result in disciplinary action that is stricter or more lenient than the listed recommendations.

Remember to follow established company disciplinary action policies and procedures. The Safety Manager must document all events, interviews, witnesses etc. Any disciplinary action must be documented on the TURNER Safety Violation Form. The employee's past performance must be considered in determining appropriate level of progressive discipline, i.e. if the violation is a second or subsequent event, progressive discipline should be elevated. The form must be signed by the employee and others involved in the process. Should the employee refuse to sign, note that in the employee signature box. Forward copies of all documents to the Project Manager and Business Unit Safety Director.

Safety violations of Turner Construction Company or federal, state and local laws will result in disciplinary action to the worker and/or subcontractor in violation. Disciplinary actions will follow progressive steps: documented verbal warning, written warning, monetary fine, suspension from project for up to one week and removal from the project. (See Section 2 Document 17A of the Safety Manual)

Action Level One - If a Subcontractor fails to comply with an applicable safety standard, Project Management will issue a written Notice of Safety Non-Compliance to the

Subcontractors site safety representative. Site Management will also forward a Warning Letter (Safety Action Form) for Safety Non-Compliance and a copy of the Notice of Safety Non-Compliance to the Subcontractors President or Operations Manager. Copies of these two documents will also be maintained in the project safety files.

Action Level Two - If item(s) of safety non-compliance are not corrected by Action Level One, or the Subcontractor repeatedly fails to comply with the applicable safety regulations, the Construction Manager will issue Stop Work Order to the Subcontractor. The Subcontractors work may not resume until the Project Manager, Safety Manager and the Subcontractors Division Manager or equivalent have met and the Subcontractor has proposed corrective actions that are acceptable to the Project. Actions that may be considered include, but are not limited to:

- Removal of certain Subcontractor personnel from the project
- Alteration of the Subcontractors job procedures
- Have the Project implement the corrective action and back charge the Subcontractor

The Subcontractor shall not resume work until proposed corrective actions are accepted by Project Management. Project Management will document the meeting results in the form of meeting minutes which will be kept on file.

Action Level Three - If Action Levels One and Two do not result in the Subcontractors safety performance being brought into compliance, subcontract termination will result. Project Management may, after informing the Client that the safety adherence procedure has not been followed and after giving the Subcontractor applicable notice, terminate the subcontract. Subcontractors that have a contract terminated in accordance with this procedure will be ineligible to participate in future Turner projects until they have implemented and demonstrated corrective actions to improve their deficiencies. Only written approval from the Regional Operations Manager can reinstate Subcontractors eligibility.

WORKERS' SAFETY RESPONSIBILITY: (Per Cal/OSHA regulations)

Although the law places primary responsibility for occupational safety and health on the employer, certain responsibilities have been designated by safety regulations and are also placed on employees. These responsibilities include;

1. Obeying ALL occupational safety and health standards, rules, regulations, and orders issued according to the law.
2. Not removing, displacing, damaging, destroying, tampering with, or removing safety devices, safeguards, notices, or warnings.
3. Not interfering with the use of safeguards by others.
4. Using any equipment (i.e., hard hat, safety belt with full body harness, eye protection, breathing respirator, required clothing, and hand or foot protection) method or process adopted for employee protection.
5. To observe and follow Turner Construction Company's "Code of Safe Work Practices"
6. To set a good example for fellow workers.

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7. To cooperate with Supervisors in preventing incidents.
8. To make safety suggestions to Supervisors.
9. To take good care of company equipment and report any unsafe or defective equipment to a supervisor.
10. To help keep the Project and work areas clean at all times.
11. To report all injuries, and/or known incidents (including "near miss" incidents) to Supervisors at once.

HAZARD ASSESSMENT

SUBCONTRACTOR SIGNATORY TO TURNER CONSTRUCTION COMPANY

When performing as General Contractors, Turner must secure and fully expect the Subcontractor's complete cooperation with the Safety Program. When this occurs, this Safety Program becomes the Project's Site-Specific Safety Program. All Turner Construction Company Subcontractors are responsible for:

1. Having an established written injury and illness prevention program and enforcing all rules and regulations.
2. Complying with all Federal, State, local and Owner/Client regulatory requirements.
3. Observing and following all safety rules established by Turner Construction Company, even though they may exceed current Federal or State regulations. **NOTE: Where conflicts exist between Turner, State, Federal or other regulatory requirements, the most stringent shall apply.**
4. Providing safety and personal protective equipment for their employees.
5. Taking immediate corrective action when notified of safety deficiencies.
6. Furnishing Turner Construction Company project management upon demand, with copies of all reports of injury to their employees, including copies of any other safety related documentation Turner Construction Company deems necessary.

SYSTEM FOR IDENTIFYING, EVALUATING, PREVENTING SAFETY AND HEALTH HAZARDS INCLUDES;

1. Turner Construction Company Safety Director reviews the General Industry Safety Orders, Construction Safety Orders, and all other regulations that are applicable to Turner operations.
2. Turner Construction Company reviews the industry and general information (including Material Safety Data Sheets (SDS) for chemicals used) on potential

occupational safety and health hazards.

3. Turner Construction Company investigates and records all Turner Construction Company Project employee and subcontractor incidents, injuries, illnesses, and unusual events that occur at its work locations.
4. Turner Construction Company makes periodic and scheduled inspections of the general work areas and specific workstations, and records the results. These include;
 - a. Turner Construction Company Corporate Safety Director makes annual project visits to all projects where Turner Construction Company has safety responsibility, depending upon Corporate Safety Director's availability and schedule.
 - b. Project Executive and/or Project Manager shall audit their respective projects on a MONTHLY basis, noting any unsafe conditions and practices observed.
 - c. Turner Construction Company Safety Director (or designee) shall conduct frequent site inspections of all Turner Construction Company Projects.
 - d. Project Superintendent(s) conduct regular weekly site inspections of all project work areas and discusses site-conditions at weekly subcontractor safety meetings.
5. Turner Construction Company evaluates information provided by employees and subcontractors on safety and health matters. To this end, the Company encourages employees to report concerns regarding unsafe and hazardous conditions and has provided a written reporting system for this purpose.

SAFETY INSPECTIONS AND INCIDENT INVESTIGATIONS

Incident Investigation and Reporting

I. Incident Reporting

For an incident involving personal injury, the subcontractor shall complete and submit to the Turner Project Safety Manager the Turner Incident Report and Employer's First Report of Injury/Illness

The Project Safety Manager and/or Superintendent shall notify the Business Unit Claims Coordinator and BU Safety Director (BUSD) as soon as practical after the incident, but no later than 8 hours. A second Incident Investigation Report will also be completed by the Turner Project Superintendent and submitted within 24 hours to the Project Manager and BU Safety Director for their review.

II. Responsibilities

All incidents resulting in injury or property damage are to be reported at the time of occurrence to the Turner Project Superintendent. The contractor in charge of the person(s) involved or witnesses to the event will complete a TCCO incident investigation form and request each craft person involved to complete a written statement whenever such events take place. Turner and or the

Owner may require a more detailed investigation and the Contractor shall comply with their directions.

III. Incident Reporting Procedures

1. Near Miss/ Injury Free Event

It is the responsibility of the prime contractor safety representative or Turner Project Superintendent to complete the investigation using the Turner Construction Company Incident investigation report. This report will include recommendations / implementation of corrective actions. The report will be submitted to the Turner Project Manager as soon as reasonably possible (same work shift) but no later than 24 hours. A gathering of all involved will take place within 24 hours of the incident to review the case and determine if the steps taken to remediate the incident were appropriate. If applicable a Lesson Learned will also be developed and approved by TCCO to relay any information gathered that may assist in the elimination of a future similar occurrence.

2. First Aid Event

Any first aid event will result in a full incident investigation. TCCO feels that no injury is minor but an opportunity to learn and eliminate like occurrences. Daily records of all first-aid treatments not otherwise reportable shall be maintained on the site first aid log.

3. Medical Treatment Event

If the injury is considered an emergency call 911. It is the responsibility of the each contractor to immediately notify Turner Project Superintendent, and the Turner Project Safety Manager of any event requiring medical treatment. Failure to do so may result in subcontractor. The Turner Safety Manager or Turner Project Superintendent will call in the claim to the assigned worker's compensation carrier.

4. Serious Injury Event

It is the responsibility of the each contractor's safety representative to immediately notify the Turner Project Superintendent of a serious injury requiring medical treatment. The Turner Safety Manager or senior TCCO project representative will oversee the completion of required Turner reporting forms. The Turner Business Unit Safety Director and Claims Manager shall be notified as soon as possible. The Turner Business Unit Safety Director will contact OSHA when required, regardless of the of the contractor's requirement to notify. The BUSD will call the Turner Crisis Hotline when appropriate.

5. Fatality

It is the responsibility of the contractor safety representative to notify the Turner Project Superintendent or the Turner Safety Manager of an event resulting in a fatality. The Turner Project Superintendent will then implement the Turner Crisis Management Plan. All notifications must follow in accordance with the Turner Crisis Management Plan notifications flowchart. The BUSD, BU Claims Manager, General Manager, and Operations Manager must be notified immediately. All media inquiries are to be referred to the Owner or as the Site Specific Crisis Plan dictates.

6. Property/Environmental Damage

It is the responsibility of the Turner Project Superintendent to notify the Turner Project Manager and Owner of the incident and assist in the assessment of damages. The Turner Project Manager will be responsible for notifying applicable insurance carriers in accordance with policy provisions. The Business Unit Safety Director and Claims Manager shall be notified in all cases.

7. General Liability Accident

It is the responsibility of the subcontractor safety representative to immediately notify the Turner Project Superintendent of an event involving the general public. The Turner Project Manager will immediately notify the Owner. The subcontractor involved will complete an incident report and submit it to the Turner Superintendent or his designee. The Business Unit Safety Director and Claims Manager shall be notified. The BUSD and Claims Manager will determine if a Third Party Investigator will be needed.

In all cases of damage, an incident, or injury, a full investigation will be conducted by TCCO and the contractors to determine potential contributors to the incident in hopes of eliminating the conditions re-occurrence on this or any project. The intent of the investigation is not to affix blame but to learn from the event.

IV. Documentation for all Incidents Requiring Medical Treatment (Emergency and Non-Emergency)

The following forms must be completed and delivered to the Project Safety Manager. These will be made available at the site.

- Turner Construction Company Report form
- Employee Incident Statement(s)
- Subcontractors Incident Report

All incidents, near misses, injuries, illnesses and unusual events that have occurred will be investigated thoroughly:

Projects are responsible to have onsite equipment to document the accident scene. Photos, sketches, schematics should be collected for report.

Except for rescue and emergency measures, the accident scene shall not be disturbed and should be barricaded until it has been released by the investigating official. The Contractor is responsible for obtaining appropriate medical and emergency assistance and to ensure timely response to injured worker or event.

Incident reports are to be submitted to the Business Unit Safety Director and Claim Coordinator, within 24 hours even though supplementary information may be necessary but not available for a period of time.

"Subcontractor" is intended to mean any contractor working under Turner's inspection, supervision and/or direction whether under contract to Turner or the Owner as on Construction Management. This policy will be used on all projects at all times.

In all cases, the Site Specific Crisis Management Plan and the Site Specific Health and Safety Plan will be the guiding document.

General Inspections

As set forth, Turner Construction Company makes periodic and scheduled inspections of the general work areas and specific workstations. General inspections are the responsibility of the Project Superintendent or his designee. Reports of these inspections will be maintained in an electronic audit database (Safety Net/DBO2).

Project Superintendent Safety Inspections

Project Superintendents shall insure that thorough documented inspections are conducted at a minimum weekly basis. All non-compliance with Turner Construction Company's Code of Safe Work Practices is to be corrected in a timely manner based on the severity of the hazard as described:

- **Imminent Danger.** If there is an immediate danger of serious harm, the result of the inspection must be an immediate correction of the problem, or removing the piece of equipment or work from service. This must be done in an obvious manner, including physical tag-out and lock-out with full knowledge of area employees, supervisors and managers.
- **Less Serious Hazards.** Although the standard is more flexible regarding less serious hazards, any problem that can be corrected immediately should be. All others will be corrected as soon as possible.

Employees who violate the Code of Safe Practices shall be disciplined and a record of the warning notice or other disciplinary action taken shall be maintained on the Turner Construction Company Project.

Employee Inspection and Reports

Employees are responsible for inspecting their work areas, machinery, and equipment for unsafe or hazardous conditions. Employees should immediately correct all unsafe conditions and report them to their supervisors immediately. If the Supervisor fails to act upon a safety complaint, the employee should bring the matter to the attention of the Project Safety Manager or another Management Representative. Employees reporting an unsafe condition may also use any written means to communicate their concern to management. Employees may also make anonymous reports. No employee shall be disciplined or otherwise discriminated against for reporting or correcting an observed unsafe condition or practice.

Special Inspections

In the event of an incident, illness or injury during work or at a Turner Construction Company location, the Project Superintendent or Safety Manager shall make complete investigation of the incident and inspect the area involved. A report of the investigation and/or inspection shall be made part of the documentation provided.

If new equipment, new substances, new procedures or a new process is introduced into the work place, it shall be investigated, inspected and a report shall be completed.

Turner defines an “incident” as any unplanned event that results in, or could have resulted in, injury, illness, property damage or interruption of business continuity. This definition incorporates “near-miss” events.

All incidents regardless of severity, shall be reported immediately to the Business Unit Safety Director (or designee) and Claims Manager. Additional notifications shall be made at the direction of Safety and/or Claims.

Should a serious injury, death or serious illness occur on any project, which is work related and, requires Cal/OSHA and/or other regulatory agencies to be notified within a specified period of time, the employer having an employee(s) involved is required by law, to notify Cal/OSHA within 8-hours, from the time the injury/illness occurred. (Cal/OSHA employs recording equipment at each District office, to record calls after normal business hours). Employer of the injured employee shall complete a written report and submit promptly for any incident no matter how insignificant it may be at the time. If an incident occurs in the field, a copy of the "Supervisors Report of Injury" should be sent to the Safety Director, Claims Manager or other Management Personnel, in the Anaheim Office, within 24 hours.

Time Frame for Filing Reports

1. The new Workers' Compensation Reform Act of 1989 requires the employers to furnish within 1-working day, the "Employee's Claim for Workers' Compensation Benefits Form". This form must be given to the injured employee (or their dependent) by the Project Supervisor. A complete copy of this form must be sent to the Safety Director's office.
2. At no time is Project Management to require the injured employee, to complete the "Employee's Claim for Workers' Compensation Benefits" paperwork.
3. The Project is responsible for obtaining all necessary information to complete the Employee's Report of Occupational Injury or Illness Form. California law requires an employer to file this report within 5-days of every industrial injury. Stringent monetary fines are imposed for failure to comply.

CONCLUSION

After an incident has been reported to the Safety Director, it will then be followed up with the Superintendent to further investigate the cause of the incident and to take any necessary corrective measures to prevent recurrence.

The Safety Director, and/or Superintendent may then use all the known facts surrounding that incident as an example when discussing safety in training meetings.

SYSTEM FOR ENCOURAGING EMPLOYEES TO REPORT HAZARDS

ENCOURAGEMENT OF EMPLOYEE REPORTING

Turner Construction Company encourages and, indeed, requires all employees to inform any business unit management of any unsafe or hazardous conditions and/or

practices.

No employee shall be disciplined , reprisal taken or discriminated against for reporting an unsafe condition or practice to management or for correcting an unsafe condition.

Employees should report all unsafe conditions to their Supervisor or other management personnel. If an employee observes an employee or supervisor violating Turner Construction Company's Code of Safe Work Practices, they are encouraged to report that observation to upper Turners upper management or the Safety Manager.

Hazard Correction (Title 8 CCR §3203(a) (6))

Unsafe or unhealthy work conditions, practices or procedures will be corrected in a timely manner based on the severity of the hazards. Hazards will be corrected according to the following procedures:

When observed or discovered; and

When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, we will remove all exposed employees from the area except those necessary to correct the existing condition. Employees who are required to correct the hazardous condition will be provided with the necessary protection and training.

We have a plan/policy for addressing the following hazards we have identified that may exist on our projects.

Slip and fall hazards and ladder safety

Chemicals covered under Cal/OSHA's Hazard Communication standard, including pesticides, cleaning products, lab chemicals, etc.

Lead paint Asbestos

Ergonomichazards

Infectious diseases, including blood borne and aerosol transmissible diseases Outdoor heat

Violence

Indoor air quality

Power tools and machinery hazards, including electrical safety, lock-out tag-out of machinery, machine guarding, etc.

Training and Instruction

Safety Training and Education Policy

I. Policy Statement

Turner believes a key component in driving an injury free environment is to develop and maintain a well-trained work force that understands basic safety and health principles. The following are minimal requirements that must be met by all Turner employees.

II. Procedure

1. Required Course Work:

- a) **New Employee Orientation – On Day One**, the employee's supervisor shall provide critical safety and health training for all new or re-hired employees. Information provided shall include:
- Hazards associated with their job and proper ways to perform the task safely.
 - Chemical Management & Hazard Communication Program.
 - Emergency Response Procedures.
 - PPE Requirements
- b) The Supervisor shall schedule a meeting with the Business Unit Safety Director to discuss the following key topics: Turner Construction Safety Policies, Developing an Injury Free Culture, and Turner Strategic Safety Objectives.
- c) OSHA 30 - All Turner employees in safety sensitive positions are required to have a 30 hour card. It is preferred that Turner's web-based course is utilized to fulfill these requirements. Individual who already have a 30 hour card must take the Turner Web based OSHA 30 hour refresher (3-Year OSHA Refresher) course within the first six months of placement. All Turner Employees are required to take the refresher course once every three years.
- d) Subcontractor Substance Abuse Testing & Reasonable Suspicion Training - All Turner employees that interact with subcontractor workforce are required to attend training and adhere to the corporate policy regarding prescreening, random, post incident, and reasonable suspicion drug abuse testing.
- e) First Aid/CPR - All Turner employees who routinely are in the field are required to maintain an active CPR/FA card.
- f) Safety Net Auditing System - All Turner employees who are routinely in the field are required to attend the Safety Net overview training and may be required to perform compliance audits at their assigned jobsite.
- g) OSHA Specific Training - When needed, individuals will be required to attend specific training that will enable Turner to be fully compliant with all applicable regulations. Scaffolds, Traffic Safety, Fall Protection, Hoists/Cranes, are a few examples of specific training.

RECORDKEEPING

The Safety Manager shall maintain appropriate records of steps taken to implement this safety program. These records shall be available for inspection at all times. Turner Construction Company will follow 5- important steps required by the Cal/OSHA record keeping system:

Records of hazard assessment inspections, including the person(s) or persons conducting the inspection, the unsafe conditions and work practices that have been identified and the action taken to correct the identified unsafe conditions and work practices, are recorded on a hazard assessment and correction form;

Documentation of safety and health training for each worker, including the worker's name or other identifier, training dates, type(s) of training, and training providers are recorded on a worker training and instruction form. We also include the records relating to worker training provided by a construction industry occupational safety and health program approved by Cal/OSHA.

Inspection records and training documentation will be maintained according to the

following checked schedule:

For one year, except for training records of employees who have worked for less than one year which are provided to the worker upon termination of employment; or indefinitely depending on the exposure a worker was exposed to.

Obtain a report of every injury and illness requiring medical treatment.

Record each injury or illness on Cal/OSHA Form #300/300A, according to the instructions provided. Project will also maintain this record keeping onsite as well.

Project Management will prepare a supplementary record of occupational injuries and illnesses on recordable cases on OSHA Form No. 301 or Workers'

Compensation/Employer's First Report of Injury (Form 5020) providing the same information.

1. Project Management will prepare an annual summary of incidents on Cal/OSHA FORM No. 300. Project will post this form on employee bulletin Board no later than February 1st of each year, and keep it posted until April 1st of that year.
2. All records shall be maintained for five years.

The Safety Director shall periodically review these safety records to evaluate the safety program and formulate improved safety procedures.

WARNING LETTER

PROJECTMANAGER: DATE: _

SUPERINTENDENT: PROJECT: _

This letter is to inform you that _____ was seen performing the following unsafe act:

Turner Construction Company has a safety program with the goal of providing an incident free workplace. In order to meet this goal, it is essential that the people working on our jobsites perform their jobs in a safe and professional manner.

We require that workers observed performing an act that endangers themselves, other workers, or the public, or violates Turner Construction Company Safety Policy receive a warning in the form of this letter. With the exception of "ZERO" tolerance policies, the following will apply:

1. 1st violation will be a verbal warning with written notice placed in the employees personnel file.
2. 2nd violation will be a written warning and if within 2 months of the first warning letter, renders the employee ineligible to work for the remainder of that day and the following workday.
3. 3rd violation will render the employee ineligible to work, for Turner Construction Company for two weeks.
4. 4th violation: termination of employment.

Immediate termination may result when the nature of the violation exposes the employee, other workers or the public to a potentially serious risk of injury or property damage.

This letter is the _____ warning that this worker has received. Sincerely,

Project Safety Manager

Distribution: Project Manager Personnel File
Project Superintendent Foreman

Project: #- _

----- EMPLOYEE

CONSENT:

I _____ have reviewed the above warning letter in its entirety. Further, I acknowledge that I have been trained in Turner Construction Company's Safety Program, that I have personal responsibility to work at all time in a safe and professional manner in accordance with that policy and that failure to work within these policies may result in disciplinary action up to and including termination.

SIGNED:

DATED

Exhibit H

Applicable Provisions

There are no current Applicable Provisions. Pursuant to Section 4.17 of the Agreement, **Exhibit H** may be amended to include any one or more agreements or instruments in respect of the Project.

Exhibit I

Construction Manager's Form of Subcontract

This Agreement, made as of the SDS day of SDS in the year SDS by and between CONTRACTOR and SDS (See Subcontract Data Sheet for this Item and all other Items marked SDS) (hereinafter called the Subcontractor).

Witnesseth, that the Subcontractor and Contractor agree as follows:

Description of Work

ARTICLE I. The Subcontractor shall perform and furnish all the work, labor, services, materials, plant, equipment, tools, scaffolds, appliances and other things necessary for SDS (Hereinafter called the Work) for and at the SDS (Hereinafter called the Project), located on premises at SDS (Hereinafter called the Premises), as shown and described in and in strict accordance with the Plans, Specifications, General Conditions, Special Conditions and Addenda thereto prepared by SDS (Hereinafter called the Architect) and with the terms and provisions of the General Contract (hereinafter called the General Contract) between Contractor and SDS (Hereinafter called the Owner) dated SDS and in strict accordance with the Additional Provisions, page(s) SDS annexed hereto and made a part hereof.

Plans & Specifications

ARTICLE II. The Plans, Specifications, General Conditions, Special Conditions, Addenda and General Contract hereinabove mentioned, are available for examination by the Subcontractor at all reasonable times at the office of Contractor; all of the aforesaid, including this Agreement, being hereinafter sometimes referred to as the Contract Documents. The Subcontractor represents and agrees that it has carefully examined and understands this Agreement and the other Contract Documents, has investigated the nature, locality and site of the Work and the conditions and difficulties under which it is to be performed and that it enters into this Agreement on the basis of its own examination, investigation and evaluation of all such matters and not in reliance upon any opinions or representations of Contractor, or of the Owner, or of any of their respective officers, agents, servants, or employees.

Contract Documents

With respect to the Work to be performed and furnished by the Subcontractor hereunder, the Subcontractor agrees to be bound to Contractor by each and all of the terms and provisions of the General Contract and the other Contract Documents, and to assume toward Contractor all of the duties, obligations and responsibilities that Contractor by those Contract Documents assumes toward the Owner, and the Subcontractor agrees further that Contractor shall have the same rights and remedies as against the Subcontractor as the Owner under the terms and provisions of the General Contract and the other Contract Documents has against Contractor with the same force and effect as though every such duty, obligation, responsibility, right or remedy were set forth herein in full. The terms and provisions of this Agreement with respect to the Work to be performed and furnished by the Subcontractor hereunder are intended to be and shall be in addition to and not in substitution for any of the terms and provisions of the General Contract and the other Contract Documents.

This Subcontract Agreement, the provisions of the General Contract and the other Contract Documents are intended to supplement and complement each other and shall, where possible, be thus interpreted. If, however, any provision of this Subcontract Agreement irreconcilably conflicts with a provision of the General Contract and the other Contract Documents, the provision imposing the greater duty or obligation on the Subcontractor shall govern.

Contractor hereby advises, and the Subcontractor hereby acknowledges, that Contractor in administering this subcontract will be utilizing an information systems infrastructure to process, deliver, and share and/or, at times, to apply electronic signatures to execute certain project documentation through electronic means. As part of the implementation of this infrastructure, the Subcontractor will be given individual, secure log on codes to access the Contractor systems presenting this electronic information. The Subcontractor hereby agrees that such electronic access and the ability of the subcontractor to print out such electronic documents will be in lieu of requiring the delivery of the contents of such electronic documents on printed or paper based media directly to Subcontractor by Contractor or through means of outside third-party services. Delivery of such electronic documents to Subcontractor will be deemed to have occurred when access to the document is made available to Subcontractor in the infrastructure.

At times, Contractor may, through this electronic infrastructure system, initiate Subcontract Change Order documents that will require that the Subcontractor review and approve or reject each such document applying its electronic signature to the approved document on the Contractor software and thereafter, Contractor will apply the electronic signature of its authorized personnel to execute the approved document and electronically deliver the fully executed document to the Subcontractor. The Subcontractor agrees and acknowledges that granting its on-line approval and electronically executing a Subcontract Change Order also affixes the Subcontractor's electronic signature to such document and in so doing it is agreeing that each such document, when electronically countersigned by Contractor, are valid and authentic and enforceable obligations of both parties and to honor and be bound by such documents as if they had been prepared on hard copy and contained the manually applied autograph signatures of the Subcontractor's and Contractor's authorized personnel. Subcontractor hereby agrees to establish, continuously use and maintain a robust and effective Security System/ID and Passwords to protect its identity when addressing and/or signing any electronic contract related documentation issued or exchanged pursuant to this Article.

Optionally, Contractor may use paper documents, where the Subcontractor reviews the proposed paper document and, if it approves, it manually affixes its autograph signature to the paper document and physically returns the signed paper document to Contractor who completes the execution by applying either its autograph or electronic signature to the Subcontract Change Order and a copy of the executed Subcontract Change Order showing the presence of both signatures is physically delivered to the Subcontractor and such Subcontract Change Order shall likewise be deemed by both parties to be valid and authentic and enforceable obligations of both parties.

Contractor may from time to time issue policies or directives applicable to electronic communications, electronic infrastructure and electronic data and Subcontractor shall comply with such policies and directives whether issued as part of this Subcontract or hereafter, and the cost and expense of such compliance shall be borne by the Subcontractor.

Planning & Scheduling

ARTICLE III. The Subcontractor shall commence the Work when notified to do so by Contractor and shall diligently and continuously prosecute and complete the Work and coordinate the Work with the other work being performed on the Project, in accordance with those project schedules as may be issued from time to time during the performance of the Work and any other scheduling requirements listed in this Agreement, so as not to delay, impede, obstruct, hinder or interfere with the commencement, progress or completion of the whole or any part of the Work or other work on the Project, and in such a manner as necessary or requested by Contractor from time to time to ensure that Contractor satisfies its obligations in a timely manner under the General Contract.

The Subcontractor shall participate and cooperate in the development of schedules and other efforts to achieve timely completion of the Work providing information for the scheduling of the times and sequence of operations required for its Work to meet Contractor's overall schedule requirements, shall continuously monitor the project schedule so as to be fully familiar with the timing, phasing and sequence of operations of the Work and of other work on the Project, and shall execute the Work in accordance with the requirements of the project schedule including any revisions thereto. Subcontractor shall abide by all requirements of the General Contract relating to the submission of schedule and other information related to the performance of Subcontractor's Work not less than 14 days prior to the time when Contractor is required to provide such materials to Owner under the General Contract, except where Contractor directs otherwise. Subcontractor shall, at no additional cost, provide updates, additional or further detailed schedules and other information as frequently and in whatever form Contractor may request, including but not limited to (1) manpower and cost loaded schedules; (2) information related to its operations as a whole, including but not limited to identifying lower tier subcontractors and suppliers and the status of payments to such subcontractors and suppliers; (3) unions and related benefit funds associated with labor used in the performance of the Work; (4) credit sources and banks providing financing or loans in connection with the performance of the Work or Subcontractor's operations as a whole and any covenants and requirements imposed upon Subcontractor in connection therewith and the status of Subcontractor's compliance with such covenants and requirements; and (5) the status of orders, fabrication and delivery of materials and arrangements for the provision of labor. The foregoing information shall include names and contact information, and Subcontractor acknowledges and agrees that Contractor may contact any persons or entities as it deems necessary to verify or obtain such information.

Subcontractor shall establish and maintain a reasonable accounting system by which records are kept that enable Contractor to readily identify all of Subcontractor's expenses, costs, payments (including to its workers, subcontractors and suppliers, unions, and benefit funds), obligations, budgets, and other financial information related to the Work or this Subcontract. Such records shall include, but not be limited to, all accounting records, written policies and procedures, subcontract files for all tiers, payment vouchers, ledgers, cancelled checks, contract amendments, change order information, insurance documents, and other similar information. Contractor shall have the right to audit, examine, and make copies of all such records (whether written, electronic or another format) as Contractor may determine, and Subcontractor shall facilitate and cooperate with Contractor's efforts in this regard. Subcontractor shall impose similar obligations on its subcontractors and vendors to ensure that comparable records kept and Contractor has the right to audit, examine and copy those records.

**Delays by
Subcontractor**

Should the progress of the Work or of the Project be delayed, disrupted, hindered, obstructed, or interfered with by any fault or neglect or act or failure to act of the Subcontractor or any of its officers, agents, servants, employees, subcontractors or suppliers so as to cause any additional cost, expense, liability or damage to Contractor including legal fees and disbursements (incurred by Contractor in defending claims of the Owner or third parties arising therefrom) or to the Owner or any damages or additional costs or expenses for which Contractor or the Owner may or shall become liable, the Subcontractor and its surety shall and does hereby agree to compensate Contractor and the Owner for and indemnify them against all such costs, expenses, damages and liability.

Overtime

If the progress of the Work or of the Project be delayed by any fault or neglect or act or failure to act of the Subcontractor or any of its officers, agents, servants, employees, subcontractors or suppliers, then the Subcontractor shall, in addition to all of the other obligations imposed by this Agreement upon the Subcontractor in such case, and at its own cost and expense, work such overtime as may be necessary to make up for all time lost in the completion of the Work and of the Project due to such delay. Should the Subcontractor fail to make up for the time lost by reason of such delay, Contractor shall have the right to cause other Subcontractors to work overtime and to take whatever other action it deems necessary to avoid delay in the completion of the Work and of the Project, and the cost and expense of such overtime and/or such other action shall be borne by the Subcontractor.

Contractor, if it deems necessary, may direct the Subcontractor to work overtime and, if so directed, the Subcontractor shall work said overtime and, provided that the Subcontractor is not in default under any of the terms or provisions of this Agreement or of any of the other Contract Documents and the direction to work overtime was not due in whole or in part to any fault or failure of Subcontractor, Contractor will pay the Subcontractor only for such actual additional wages paid, if any, at rates which have been approved by Contractor plus taxes imposed by law on such additional wages, plus workers' compensation insurance, liability insurance and levies on such additional wages if required to be paid by the Subcontractor to comply with Subcontractor's obligations under this Agreement. Subcontractor acknowledges that in the event that it may intend to pursue a claim of inefficiency, loss of productivity or other similar or related request for additional compensation, Subcontractor may rely only on evidence indicating the actual inefficiency, loss of productivity or other similar consequence as it occurred on the Project and agrees that no reports, analyses, data, industry or academic studies or any other evidence that do not exclusively rely on and pertain to the Work performed at the Project shall be used or in any way considered, in whole or in part, in connection with the resolution of such a claim, whether by Contractor or any forum for dispute resolution.

Price

ARTICLE IV. The sum to be paid by Contractor, out of funds received from the owner, to the Subcontractor for the satisfactory performance and completion of the Work and of all of the duties, obligations and responsibilities of the Subcontractor under this Agreement and the other Contract Documents shall be SDS (Hereinafter called the Price) subject to additions and deductions as herein provided.

The Price includes all Federal, State, County, Municipal and other taxes imposed by law and based upon labor, services, materials, equipment or other items acquired, performed, furnished or used for and in connection with the Work, including but not limited to sales, use and personal property taxes payable by or levied or assessed against the Owner, Contractor or the Subcontractor. Where the law requires any such taxes to be stated and charged separately, the total price of all items included in the Work plus the amount of such taxes shall not exceed the Price.

Progress Payments

On or before the last day of each month the Subcontractor shall submit to Contractor, in the form required by Contractor, a written requisition for payment showing the proportionate value of the Work installed to that date, from which shall be deducted: a reserve of SDS [not to exceed 5% on California public projects]; all previous payments; all amounts and claims against Subcontractor, by Contractor or any third party, for which Subcontractor is responsible hereunder; and all charges for services, materials, equipment and other items furnished by Contractor to or chargeable to the Subcontractor; and the balance of the amount of such requisition, as approved by Contractor and the Architect and for which payment has been received by Contractor from the Owner, shall be due and paid to the Subcontractor on or about the fifteenth (15th) day of the succeeding month or in accordance with the Contract Documents. Contractor shall have the right, at its sole discretion, to issue payments to Subcontractor by way of joint checks to Subcontractor and suppliers and/or vendors of Subcontractor, and Subcontractor agrees to cooperate fully in facilitating the making of such joint payments.

Payments in General

Provided all requirements under the Contract Documents for payment (the "Payment Requirements") have been met, then actual payment, whether a progress or final payment, or for extras or change orders or delays to the Work, will not be due until the first to occur of (a) ten (10) work days after receipt from the Owner or (b) ninety (90) calendar days after the Payment Requirements have been satisfied. This provision is not intended to result in a waiver or forfeiture of the right to receive payment and is intended only to defer the making of payment to Subcontractor for a reasonable time under the circumstances so that Contractor may pursue payment by the Owner in the event that Owner does not make payment timely. If Contractor has provided payment or performance bonds or a combination payment and performance bond, the obligation of Contractor and its Surety under any of those bonds to make any payment (whether a progress payment or final payment) to a claimant on that bond is similarly subject to the condition of payment set forth hereinabove.

The Subcontractor shall submit with its first requisition for payment a detailed schedule showing the breakdown of the Price into its various parts for use only as a basis of checking the Subcontractor's monthly requisitions.

Contractor reserves the right to advance the date of any payment (including the final payment) under this Agreement if, in its sole judgment, it becomes desirable to do so.

The Subcontractor agrees that, if and when requested to do so by Contractor, it shall furnish such information, evidence and substantiation as Contractor may require with respect to the nature and extent of all obligations incurred by the Subcontractor for or in connection with the Work, all payments made by the Subcontractor thereon, and the amounts remaining unpaid, to whom and the reasons therefor.

Final Payment

Final payment to the Subcontractor shall be made only with funds received by Contractor from the Owner, the Construction Lender or the Owner's Agent as final payment for Work under the General Contract. Final payment by Contractor to the Subcontractor shall not become due and payable until the following express conditions precedent have been met: (1) the completion and acceptance of the Work by Contractor and the Architect; (2) provision by the Subcontractor of evidence satisfactory to Contractor that there are no claims, obligations or liens outstanding or unsatisfied for labor, services, materials, equipment, taxes or other items performed, furnished, or incurred for or in connection with the Work; (3) execution and delivery by the Subcontractor, in a form satisfactory to Contractor of a general release running to and in favor of Contractor and the Owner; and (4) complete and full satisfaction of all claims, demands and disputes, and all obligations and responsibilities of Subcontractor, arising out of or related to the Subcontract, including those as between Contractor and Subcontractor as well as those between Subcontractor and any third party. Should there be any such claim, obligation or lien or unsatisfied obligation or responsibility whether before or after final payment is made, the Subcontractor shall pay, refund or deliver to Contractor (1) all monies that Contractor and/or the Owner may have incurred or will incur in satisfying, discharging or defending against any such claim, obligation or lien or any action brought or judgment recovered thereon, (2), all costs and expenses, including legal fees and disbursements incurred or to be incurred in connection with defending against or otherwise addressing such claim, obligation or lien of third parties, and (3) such amounts as Contractor or Owner shall, in their sole discretion, determine to be an amount sufficient to protect Contractor and Owner therefrom (in lieu of payment of such amounts, Subcontractor may, at Owner's and Contractor's sole discretion, deliver a bond satisfactory to Contractor and Owner). Such refund and payment shall be made within ten (10) days of request by Contractor to Subcontractor for same. Provided all requirements under the Contract Documents for final payment have been met, final payment will not be due until the earlier of (a) ten (10) work days after receipt from the Owner, the Construction Lender or the Owner's Agent or (b) ninety (90) calendar days after the requirements of the Contract Documents for final payment have been satisfied. This provision is not intended to result in a waiver or forfeiture of the right to receive final payment and is intended only to defer the making of payment to Subcontractor for a reasonable time under the circumstances so that Contractor may pursue payment by the Owner in the event that Owner does not make payment timely.

Liens by Others

If any claim or lien is made or filed with or against Contractor, the Owner, the Project, the Premises or the Project funds by any person claiming that the Subcontractor or any subcontractor or other person under subcontract to Subcontractor, or any person or entity employed or engaged by or through Subcontractor at any tier, has failed to make payment for any labor, services, materials, equipment, taxes or other items or obligations furnished or incurred for or in connection with the Work, or if any such claim or lien is filed or presented, or if Contractor, in good faith, believes that such a claim or lien may be filed or brought, or if at any time there shall be evidence of such nonpayment or of any claim or lien for which, if established, Contractor or the Owner might become liable and which is chargeable to the Subcontractor, or if the Subcontractor or any subcontractor or other person under subcontract to Subcontractor, or any person or entity employed or engaged by or through Subcontractor at any tier causes damage to the Work or to any other work on the Project, or if the Subcontractor fails to perform or is otherwise in default under any of the terms or provisions of this Agreement, Contractor shall have the right (A) to retain from any payment then due or thereafter

to become due an amount which it deems sufficient to (1) satisfy, discharge and/or defend against any such claim or lien or any action which may be brought or judgment which may be recovered thereon, (2) make good any such nonpayment, damage, failure or default, and (3) compensate Contractor and the Owner for and indemnify and hold them harmless against any and all losses, liability, damages, costs and expenses, including legal fees and disbursements, which may be sustained or incurred by either or both of them in connection with defending or otherwise addressing such claim or lien; and (B) to demand that Subcontractor provide, within ten (10) days of Contractor's request therefore, proof to the satisfaction of Contractor and Owner that such non-payment, claim or lien has been fully satisfied, dismissed and discharged. Upon the failure of Subcontractor to fulfill the requirements of a demand issued by Contractor pursuant to subsection (B) above, Contractor may, in such manner as Contractor may in its sole discretion determine, secure the satisfaction, dismissal and discharge of such claim, by payment or otherwise, and Subcontractor shall within ten (10) days of demand therefore, be liable for and pay to Contractor all damages (including legal fees and disbursements incurred in defending against or otherwise addressing such claim or lien) incurred or suffered by Contractor or

Owner. Contractor shall, in addition, have the right to apply and charge against the Subcontractor so much of the amount retained as may be required for the foregoing purposes. Subcontractor further agrees to indemnify, hold harmless and defend Contractor and Owner, upon demand, for any and all such claims, liens, and the costs, expenses (including legal fees and disbursements incurred by the Owner or Contractor in defending against or otherwise addressing such claim or lien), damages and liabilities arising out of or related thereto. Subcontractor acknowledges (1) that discharge of such liens or claims by bond imposes liability upon a surety and Contractor, and (2) that Contractor is not required to discharge such lien or claims by bond when exercising its rights hereunder. Subcontractor agrees that should there be any amounts due or which may become due to Subcontractor in connection with any other subcontracts between Contractor and Subcontractor or other obligations that Contractor may have to Subcontractor, Contractor shall be entitled to withhold payment under such other subcontract or obligations to the extent that Contractor believes that the unpaid balance of this Subcontract may not be adequate to satisfy Subcontractor's obligations to Contractor hereunder.

Effect of Payment

No payment (final or otherwise) made under or in connection with this Agreement shall be conclusive evidence of the performance of the Work or of this Agreement, in whole or in part, and no such payment shall be construed to be an acceptance of defective, faulty or improper work or materials nor shall it release the Subcontractor from any of its obligations under this Agreement; nor shall entrance and use by the Owner constitute acceptance of the Work or any part thereof. The failure of Subcontractor to fully perform and satisfy any or all obligations set forth in this Article IV shall constitute a default, entitling Contractor to take action as described in Article XI.

Subcontractor acknowledges and agrees that to the extent that payments received by Subcontractor include amounts for Work performed by subcontractors to Subcontractor or services or materials provided to Subcontractor by suppliers, vendors, workers employed by or through Subcontractor, all such payments received by Subcontractor shall be deemed to have been received by Subcontractor as trustee with those entitled to receive payment from Subcontractor as beneficiaries of such amounts, and Subcontractor shall hold such funds separately and utilize such amounts only for the purpose of making payment to these beneficiaries. In the event that Subcontractor subsequently determines that a beneficiary is not entitled to receipt of payment, Subcontractor shall return such unpaid funds to Contractor.

Extension of Time & Delays

ARTICLE V. Should the Subcontractor be delayed, obstructed, hindered or interfered with in the commencement, prosecution or completion of the Work by any cause including but not limited to any act, omission, neglect, negligence or default of Contractor or of anyone employed by Contractor or by any other contractor or subcontractor on the Project, or by the Architect, the Owner or their contractors, subcontractors, agents or consultants, or by damage caused by fire or other casualty or by the combined action of workers or by governmental directive or order in no way chargeable to the Subcontractor, or by any extraordinary conditions arising out of war or government regulations, or by any other cause beyond the control of and not due to any fault, neglect, act or omission of the Subcontractor, its officers, agents, employees, subcontractors or suppliers, then except where the General Contract has specific requirements at variance with the foregoing, in which case the requirements of the General Contract shall govern, the Subcontractor shall be entitled to an extension of time for a period equivalent to the time lost by reason of any and all of the aforesaid causes; provided, however, that the Subcontractor shall not be entitled to any such extension of time unless the Subcontractor (1) notifies Contractor in writing of the cause or causes of such delay, obstruction, hindrance or interference within forty eight (48) hours of the commencement thereof and (2) demonstrates that it could not have anticipated or avoided such delay, obstruction, hindrance or interference and has used all available means to minimize the consequences thereof. Subcontractor acknowledges that provision of such notice is an essential condition precedent to Subcontractor's rights in connection with any such delays, obstructive hindrances or interferences to Contractor's ability to fully identify, and expeditiously, address and avoid such cause or causes, and, accordingly, Subcontractor expressly waives all rights with respect to any such cause or causes for which notice hereunder was not provided. Notwithstanding the foregoing, if the General Contract is at variance with granting such time extension, then the provisions of the General Contract shall control.

The Subcontractor agrees that it shall not be entitled to nor claim any cost reimbursement, compensation or damages for any delay, obstruction, hindrance or interference to the Work except to the limited extent that Contractor has actually recovered corresponding cost reimbursement, compensation or damages from the Owner under the Contract Documents for such delay, obstruction, hindrance or interference, and then only to the extent of the amount, if any, which Contractor on behalf of the Subcontractor, actually received from the Owner on account of such delay, obstruction, hindrance or interference. Notwithstanding any term or provision herein to the contrary, Subcontractor expressly waives and releases all claims or rights to recover lost profit (except for profit on work actually performed), recovery of overhead (including home office overhead), and any other indirect damages, costs or expenses in any way arising out of or related to the Agreement, including the breach thereof by Contractor, delays, charges, acceleration, loss of efficiency or productivity disruptions and interferences with the performance of the work.

It shall be an express condition precedent to any obligation on the part of Contractor to make payment of any such cost, reimbursement, compensation or damages to the Subcontractor hereunder that Contractor shall first be determined to be entitled to such compensation on behalf of the Subcontractor and then receive such payment from Owner, and Subcontractor expressly acknowledges that Contractor is not obligated or required to pursue Subcontractor claims as against Owner if Contractor, in its sole discretion, after review of Subcontractor's claim, has deemed the claim to lack merit in whole or in part.

The Subcontractor agrees that it shall contribute a fair and proportionate share of the costs of advancing the claims of the Subcontractor for delay, including but not limited to legal and other professional fees.

Freight Charges & Shipments

ARTICLE VI. The Subcontractor in making or ordering shipments shall not consign or have consigned materials, equipment or any other items in the name of Contractor. Contractor is under no obligation to make payment for charges on shipments made by or to the Subcontractor but may, at its option, pay such charges, in which case the Subcontractor shall reimburse Contractor for the amount of such payments plus a service charge of twenty-five percent (25%) of the amount so paid.

Dimensions

ARTICLE VII. Notwithstanding the dimensions on the Plans, Specifications and other Contract Documents it shall be the obligation and responsibility of the Subcontractor to take such measurements as will ensure the proper matching and fitting of the Work covered by this Agreement with contiguous work.

**Shop
Drawings**

The Subcontractor shall prepare and submit to Contractor such shop drawings as may be necessary to describe completely the details and construction of the Work. Approval of such shop drawings by Contractor and/or the Architect shall not relieve the Subcontractor of its obligation to perform the Work in strict accordance with the Plans, Specifications, the Additional Provisions hereof and the other Contract Documents, nor of its responsibility for the proper matching and fitting of the Work with contiguous work and the coordination of the Work with other work being performed on the site, which obligation and responsibility shall continue until completion of the Work.

**Contiguous
Work**

The Subcontractor's submission of a shop drawing to Contractor shall constitute the Subcontractor's representation, upon which Contractor may rely, that the Subcontractor has reviewed the submission for accuracy and compliance with all Contract Documents and that wherever engineering is required to be performed, same has been performed by a qualified and licensed engineer. Furthermore, the review of the Shop Drawing by Contractor shall not constitute an undertaking by Contractor to identify deficiencies in the submission, that being an undertaking within the sole responsibility of the Subcontractor.

**Interpretation
of Plans &
Specifications**

Should the proper and accurate performance of the Work hereunder depend upon the proper and accurate performance of other work not covered by this Agreement, the Subcontractor shall carefully examine such other work, determine whether it is in fit, ready and suitable condition for the proper and accurate performance of the Work hereunder, use all means necessary to discover any defects in such other work, and before proceeding with the Work hereunder, report promptly any such improper conditions and defects to Contractor in writing and allow Contractor a reasonable time to have such improper conditions and defects remedied. Should Subcontractor fail to comply with the requirements of this Article, Subcontractor shall bear all costs incurred by Contractor, Owner and other subcontractors, and shall not be entitled to extensions of time and adjustments in Price, that could have been avoided by Subcontractor's compliance with the requirements of this Article.

ARTICLE VIII. The Work hereunder is to be performed and furnished under the direction and to the satisfaction of both the Architect and Contractor. The decision of the Architect as to the true construction, meaning and intent of the Plans and Specifications shall be final and binding upon the parties hereto. Contractor will furnish to the Subcontractor such additional information and Plans as may be prepared by the Architect to further describe the Work to be performed and furnished by the Subcontractor and the Subcontractor shall conform to and abide by the same.

The Subcontractor shall not make any changes, additions and/or omissions in the Work except upon written order of Contractor as provided in Article IX hereof.

**Change
Orders,
Additions
& Deductions**

ARTICLE IX. Contractor reserves the right, from time to time, whether the Work or any part thereof shall or shall not have been completed, to make changes, additions and/or omissions in the Work as it may deem necessary, upon written order to the Subcontractor. The value of the work to be changed, added or omitted shall be stated in said written order and shall be added to or deducted from the Price.

The value of the work to be changed, added or omitted shall be determined by the lump sum or unit prices, if any, stipulated herein for such work. If no such prices are stipulated, such value shall be determined by whichever of the following methods or combination thereof Contractor may elect:

- (a) By adding or deducting a lump sum or an amount determined by a unit price agreed upon between the parties hereto.
- (b) By adding (1) the actual net cost to the Subcontractor of labor in accordance with the established rates, including required union benefits, premiums the Subcontractor is required to pay for workmen's compensation and liability insurance, and payroll taxes on such labor, (2) the actual cost to the Subcontractor of materials and equipment and such other direct costs as may be approved by Contractor less all savings, discounts, rebates and credits, (3) an allowance of **SDS** for overhead on items (1) and (2) above, and (4) an allowance of **SDS** for profit on items (1), (2) and (3) above.

Should the parties hereto be unable to agree as to the value of the work to be changed, added or omitted, the Subcontractor shall proceed with the work promptly under the written order of Contractor from which order the stated value of the work shall be omitted, and the determination of the value of the work, if not resolved in the normal course, shall be addressed pursuant to the dispute resolution procedures in accordance with Article XVIII.

In the case of omitted work Contractor shall have the right to withhold from payments due or to become due to the Subcontractor an amount which, in Contractor's opinion, is equal to the value of such work until such time as the value thereof is determined by agreement or by the Architect as hereinabove provided.

All changes, additions or omissions in the Work ordered in writing by Contractor shall be deemed to be a part of the Work hereunder and shall be performed and furnished in strict accordance with all of the terms and provisions of this Agreement and the other Contract Documents. Subcontractor accepts the responsibility to keep its surety informed of all such modifications to its contract. The obligations of Subcontractor and Subcontractor's Surety shall not be reduced, waived or adversely affected by the issuance of such change orders, additions or deductions even if Subcontractor fails to inform Surety of same and Contractor shall not be required to obtain consent of the Surety to such modifications.

Subcontractor shall provide Contractor with written notice of any circumstance or direction given by Contractor which Subcontractor may regard as a change, addition and/or omission or which may otherwise serve as the basis for a request for an increase in Price or extension of time within 5 days of the receipt of the direction or the occurrence of the event giving rise to such a request. Such written notice shall provide a full explanation of the circumstances or direction and the extent of the increase and extension sought, including a detailed breakdown and analysis supporting such request. Failure of the Subcontractor to provide such written notice shall constitute a waiver of Subcontractor's right to any such increase or extension.

Subcontractor acknowledges that the General Contract may include provisions whereby Contractor is required to provide notice, information, reports and analyses in the event that Contractor intends to pursue or which may affect Contractor's right's to an extension of time or increase in Contractor's price to the Owner, whether by way of change order or otherwise, and that the failure to provide such notice, information, reports and analyses may result in a waiver or forfeiture of the right to such an extension or increase. Accordingly, Subcontractor agrees that Subcontractor shall provide all such notices, information, reports and analyses to Contractor, in the same form, content and manner as Contractor is required to provide to Owner under the General Contract in the event that Subcontractor intends to pursue an extension of time or increase in Price. Subcontractor shall provide all such notices, information, reports and analyses to Contractor not later than 3 business days prior to the time by which Contractor must submit corresponding notice, information, reports and analyses to Owner so that Contractor can pursue like

extensions and /or increases in Contractor's price from the Owner. Subcontractor acknowledges that its failure to comply with the terms of this paragraph may result in the loss of or prejudice to Contractor's ability to receive adjustments and extensions time from Owner. Subcontractor therefore agrees that it shall be deemed to have waived and forfeited all such rights in the event that it fails to provide notice, information, reports and analyses to Contractor as required by this Article. The terms and provisions of the paragraph are neither intended to relieve Subcontractor of the obligation to provide timely notices, information, reports and analyses, nor to extend shorter durations, required by the Contract Documents.

Notwithstanding the forgoing, the Subcontractor agrees that it shall not be entitled to nor claim any cost reimbursement, compensation, damages or extensions of time attributable to any changes, additions and/or omissions directed by Contractor except to the limited extent that Contractor has actually recovered corresponding cost reimbursement, compensation, damages or extensions of time from the Owner under the Contract Documents for such changes, additions and/or omissions and then only to the extent of the amount, if any, which Contractor on behalf of the Subcontractor, actually received from the Owner on account of such delay, obstruction, hindrance or interference. The preceding sentence shall not apply in a situation in which Contractor directed the performance of changes, additions and/or omissions by Subcontractor notwithstanding express language in the General Contract clearly indicating that Contractor is not entitled to recover a corresponding cost reimbursement, compensation, damages or extensions of time from the Owner.

**Inspection
& Defective
Work**

ARTICLE X. The Subcontractor shall at all times provide sufficient, safe and proper facilities for the inspection of the Work by Contractor, the Architect, and their authorized representatives in the field, at shops or at any other place where materials or equipment for the Work are in the course of preparation, manufacture, treatment or storage. The Subcontractor shall, within twenty-four (24) hours after receiving written notice from Contractor to that effect, proceed to take down all portions of the Work and remove from the premises all materials whether worked or unworked, which the Architect, Contractor, Owner or any of its design consultants shall condemn as unsound, defective or improper or as in any way failing to conform to this Agreement or the Plans, Specifications or other Contract Documents, and the Subcontractor, at its own cost and expense, shall replace the same with proper and satisfactory work and materials and make good all work damaged or destroyed by or as a result of such unsound, defective, improper or nonconforming work or materials or by the taking down, removal or replacement thereof.

**Failure to
Prosecute, etc.**

ARTICLE XI. Should the Subcontractor at any time, whether before or after final payment or completion of the Work, refuse or neglect to supply a sufficiency of skilled workers or materials of the proper quality and quantity, or fail in any respect to prosecute the Work with promptness and diligence, or cause by any act or omission the stoppage, impede, obstruct, hinder or delay of or interference with or damage to the work of Contractor or of any other contractors or subcontractors on the Project, or fail in the performance of any of the terms and provisions of this Agreement or of the other Contract Documents, or should the Architect, Contractor, Owner or any of its design consultants, determine that the Work or any portion thereof is not being performed in accordance with the Contract Documents, or should there be filed by or against the Subcontractor a petition in bankruptcy or for an arrangement or reorganization, or should the Subcontractor become insolvent or be adjudicated a bankrupt or go into liquidation or dissolution, either voluntarily or involuntarily or under a court order, or make a general assignment for the benefit of creditors, or otherwise acknowledge insolvency, then in any of such events, each of which shall constitute a default hereunder on the Subcontractor's part, Contractor shall have the right, in addition to any other rights and remedies provided by this Agreement and the other Contract Documents or by law, at one time or in phases at Contractor's discretion, after three (3) days written notice to the Subcontractor mailed or delivered to the last known address of the latter, (a) to perform and furnish through itself or through others any such labor or materials for all or any portion of the Work and to deduct the cost thereof from any monies due or to become due to the Subcontractor under this Agreement, (b) to terminate the employment of the Subcontractor for all or any portion of the Work, and/or (c) enter upon the premises and take possession, for the purpose of completing all or any portion of the Work, of all materials, equipment, scaffolds, tools, appliances and other items thereon as Contractor may select, all of which the Subcontractor hereby authorizes Contractor to employ and/or communicate with any person or persons in connection with the completion of the Work and/or to provide all the labor, services, materials, equipment and other items required therefor. In case of Contractor taking action under this Article, including termination of the employment of the Subcontractor, the Subcontractor shall not be entitled to receive any further payment under this Agreement until the Work shall be wholly completed to the satisfaction of Contractor, Owner and the Architect and shall have been accepted by them, at which time, if the unpaid balance of the amount to be paid under this Agreement shall exceed the cost and expense incurred by Contractor in completing the Work, such excess shall be paid by Contractor to the Subcontractor; but if such cost and expense shall exceed such unpaid balance, then the Subcontractor and its surety, if any, shall pay the difference to Contractor. Such cost and expense shall include, not only the cost of completing the Work to the satisfaction of Contractor and the Architect and of performing and furnishing all labor, services, materials, equipment, and other items required therefore, but also all losses, damages, costs and expenses, (including legal fees and disbursements incurred in connection with repurchase, in defending or otherwise addressing claims by the Owner or third parties), and disbursements sustained, incurred or suffered by reason of or resulting from the Subcontractor's default. Should Contractor take action by effectuating the provisions of this paragraph, and should it subsequently be determined that such action, including a termination effectuated by the terms of this Article, was improper, such termination shall be treated as a termination for convenience pursuant to Article XX below. Subcontractor hereby transfers and

assigns to Contractor the all rights under agreements that Subcontractor may have with subcontractors to Subcontractor, suppliers and vendors in connection with the Work or the Project, which transfers and assignments may be accepted at Contractor's sole discretion in the event that Contractor has taken action under this Article. Subcontractor agrees to fully cooperate with Contractor in pursuing Contractor's rights hereunder and that Contractor shall not be required to defer or delay action taken pursuant to this Article during the pendency of any review, investigation, evaluation or assessment by Subcontractor or its surety.

It is recognized that if the Subcontractor institutes or has instituted against it a case under Title 11 of the United States Code (Bankruptcy Code), such event could impair or frustrate the Subcontractor's performance of this Agreement. Accordingly, it is agreed that upon the occurrence of any such event, Contractor shall be entitled to request of Subcontractor or its trustee or other successor adequate assurances of future performance. Failure to comply with such request within ten (10) days of delivery of the request shall entitle Contractor, in addition to any other rights and remedies provided by this Agreement or by law, to terminate this Agreement. Pending receipt of adequate assurances of performance and actual performance in accordance herewith, Contractor shall be entitled to perform and furnish through itself or through others any such labor, materials or equipment for the Work as may be necessary to maintain the progress of the Work and to deduct the cost thereof from any monies due or to become due to the Subcontractor under this Agreement. In the event of such bankruptcy proceedings, this Agreement shall terminate if the Subcontractor rejects this Agreement or if there has been a default and the Subcontractor is unable to give adequate assurance that it will perform as provided in this Agreement or otherwise is unable to comply with the requirements for assuming this Agreement under the applicable provisions of the Bankruptcy Code.

To the fullest extent permitted by law, including but not limited to California Civil Code Section 2782 et seq., Subcontractor, in addition to any other rights available to Contractor hereunder, agrees to indemnify, hold harmless and defend Contractor from and against any and all claims, demands, suits, damages, judgments, liabilities, costs and expenses (including legal fees and disbursements) arising out of or related to Subcontractor's breach of any term of the Agreement.

**Loss or
Damage to
Work**

ARTICLE XII. Contractor shall not be responsible for any loss or damage to the Work to be performed and furnished under this Agreement, however caused, until after final acceptance thereof by Contractor and the Architect, nor shall Contractor be responsible for loss of or damage to materials, tools, equipment, appliances or other personal property owned, rented or used by the Subcontractor or anyone employed by it in the performance of the Work, however caused.

**Builder's Risk
Insurance**

Contractor or Owner shall effect and maintain All-Risk Builder's Risk insurance in accordance with the Contract Documents upon all Work, materials and equipment incorporated in the Project and all materials and equipment on or about the Premises intended for permanent use or incorporation in the Project or incident to the construction thereof, the capital value of which is included in the cost of the Work, but not including any contractors' machinery, tools, equipment or other personal property owned, rented or used by the Subcontractor or anyone employed by it in the performance of the Work.

A loss insured under Contractor or the Owner's All-Risk Builder's Risk insurance shall be adjusted by the Contractor or the Owner as fiduciary and made payable to Contractor or the Owner as fiduciary for the Insureds, as their interests may appear. Contractor or the Owner shall pay Subcontractors their just shares of insurance proceeds received by Contractor or the Owner, and by appropriate agreements, written where legally required for validity, and shall require Subcontractors to make payments to their subcontractors in a similar manner.

Cleaning Up

ARTICLE XIII. The Subcontractor shall, at its own cost and expense, (1) keep the Premises free at all times from all waste materials, packaging materials and other rubbish accumulated in connection with the execution of its Work by collecting and depositing said materials and rubbish in locations or containers as designated by Contractor from which it shall be removed by Contractor from the Premises without charge, (2) clean and remove from its own Work and from all contiguous work of others any soiling, staining, mortar, plaster, concrete or dirt caused by the execution of its Work and make good all defects resulting therefrom (3) at the completion of its Work in each area, perform such cleaning as may be required to leave the area "broom clean", and (4) at the entire completion of its Work, remove all of its tools, equipment, scaffolds, shanties and surplus materials. Should the Subcontractor fail to perform any of the foregoing to Contractor's satisfaction, Contractor shall have the right to perform and complete such work itself or through others and charge the cost thereof to the Subcontractor.

**Ethics &
Compliance**

ARTICLE XIV. The Subcontractor shall obtain and pay for all necessary permits and licenses pertaining to the Work and shall comply with all Federal, State, Municipal and local laws, ordinances, codes, rules, regulations, standards, orders, notices and requirements, including but not limited to those relating to safety, storm water management, discrimination in employment, fair employment practices, immigration laws or equal employment opportunity, and whether or not provided for by the Plans, Specifications, General Conditions, or other Contract Documents, without additional charge or expense to Contractor and shall also be responsible for and correct, at its own cost and expense, any violations thereof resulting from or in connection with the performance of its Work. Each requisition for payment shall constitute a representation and warranty that Subcontractor is in compliance with applicable law.

The Subcontractor shall at any time upon demand furnish such proof as Contractor may require showing such compliance and the correction of such violations. The Subcontractor agrees to save harmless and indemnify Contractor from and against any and all loss, injury, claims, actions, proceedings, liability, damages, fines, penalties, costs and expenses, including legal fees and disbursements incurred by Contractor in addressing or responding to third party, governmental agency or regulatory authority actions, caused or occasioned directly or indirectly by the Subcontractor's failure to comply with any of said laws, ordinances, rules, regulations, standards, orders, notices or requirements or to correct such violations therefore resulting from or in connection with the performance of Work.

The Immigration and Nationality Act as amended by the Immigration Reform and Control Act of 1986 (IRCA) makes it illegal for employers to knowingly hire persons who are not authorized to work in the United States. For all employees, employers are required to complete an Employment Eligibility Verification form I-9 which requires the prospective employee to produce documentation that establishes identity and employment eligibility. For more information visit www.uscis.gov, or speak to your attorney. Each subcontractor is solely responsible for properly completing Employment Eligibility Verifications for their own employees.

Subcontractor acknowledges represents and warrants that Subcontractor is aware of and understands IRCA, that Subcontractor is in compliance with IRCA, and that Subcontractor is not knowingly employing workers who are not authorized to work in the United States. Subcontractor agrees that Subcontractor will not employ any worker under this subcontract for whom Subcontractor has not completed and maintained I-9 verification. Subcontractor agrees that if Subcontractor acquires knowledge (constructive or otherwise, including receipt of a "no match" letter from Social Security Administration) indicating that one of Subcontractor's workers on this project may not be authorized to work in the United States, despite Subcontractor having conducted a facially valid I-9 verification, that Subcontractor will exercise due diligence as required by law to confirm authorization status and take appropriate action which may include termination of employment. Subcontractor represents and warrants that they will not subcontract to or utilize labor sources that it knows or has reason to know violate IRCA.

Contractor has a longstanding reputation for honesty and integrity in its business dealings and for its corporate policies promoting lawful and ethical behavior. Contractor is committed to upholding that reputation and has adopted a Standard of Business Conduct Policy Statement which governs the actions of all of its employees. Pursuant to that Policy Statement, Contractor employees are prohibited from accepting bribes or kickbacks in any form and, further, are prohibited from accepting goods or services provided by a subcontractor, supplier or vendor for the personal benefit of the employee, his or her relatives, or any entity in which the employee or his or her relatives has a personal interest. This prohibition includes, but is not limited to; work performed on an employee's residence and applies regardless of whether the beneficiary of the goods or services pays for them. Therefore, if the Subcontractor offers or provides a bribe or kickback to any employee, or offers or provides goods or services to any employee, his or her relatives, or any entity in which the employee or his or her relatives has a financial interest, the Subcontractor will be considered to be in material breach of this Subcontract. Subcontractor undertakes the commitment to advise Contractor of any action by any entity or person associated with the project that Subcontractor believes violates any applicable law, rule or regulation. Subcontractor's violation of any of the foregoing shall be considered as Subcontractor's failure to perform its obligations under the terms and conditions of this Agreement. Such failure shall be considered adequate and justifiable

grounds for Contractor to effectuate its rights and remedies under the provisions of Article XI of this Agreement.

The provisions of this Article must be incorporated into any subcontract Subcontractor enters into in connection with the performance of the Work.

**Labor to be
Employed**

ARTICLE XV. The Subcontractor shall not employ workers, means, materials or equipment or assign work in any manner which may cause strikes, work stoppages or any disturbances by workers employed by the Subcontractor, Contractor or other contractors or subcontractors on or in connection with the Work or the Project or the location thereof. The Subcontractor agrees that all disputes as to jurisdiction of trades shall be adjusted in the manner or by a process that Contractor may require, including, if Contractor so requires, in accordance with any plan for the settlement of jurisdictional disputes to which Contractor may be bound in connection with the Project which may be in effect either nationally or in the locality in which the Work is being done. Subcontractor agrees that it shall assign work consistent with any such plan and shall be bound and abide by all such adjustments and settlements of jurisdictional disputes, provided that the provisions of this Article shall not be in violation of or in conflict with any provisions of law applicable to the settlement of such disputes. Should the Subcontractor fail to carry out or comply with any of the foregoing provisions, Contractor shall have the right, in addition to any other rights and remedies provided by this Agreement or the other Contract Documents or by law, after three (3) days written notice mailed or delivered to the last known address of the Subcontractor, to terminate this Agreement or any part thereof or the employment of the Subcontractor for all or any portion of the Work, and, for the purpose of completing the Work, to enter upon the Premises and take possession, in the same manner, to the same extent and upon the same terms and conditions as set forth in Article XI of this Agreement.

The Project or General Contract may be subject to Federal prevailing wage requirements, such as the Davis-Bacon Act or the Walsh-Healy Act, or other similar laws, statutes or requirements at a state or local level. Subcontractor shall strictly comply with all applicable prevailing wage laws, statutes or requirements and shall maintain such records as necessary to establish the amount of wages and other compensation paid to workers in connection with the Project and shall submit to Turner, as a condition for payment, certified payrolls in the form prescribed by any such laws, regulations or requirements. Subcontractor expressly agrees that the indemnification obligations set forth in Article XIV of this Agreement shall apply to any violations by Subcontractor of any such laws, statutes or regulations and the failure to maintain records as required herein.

**Taxes &
Contributions**

ARTICLE XVI. The Subcontractor for the Price herein provided, hereby accepts and assumes exclusive liability for and shall indemnify, protect and save harmless Contractor and the Owner from and against the payment of:

1. All contributions, taxes or premiums (including interest and penalties thereon) which may be payable under the Unemployment Insurance Law of any State, Federal Social Security Act, Federal, State, County and/or Municipal Tax Withholding Laws, or any other law, measured upon the payroll of or required to be withheld from employees, by whomsoever employed, engaged in the Work to be performed and furnished under this Agreement.
2. All sales, use, personal property and other taxes (including interest and penalties thereon) required by any Federal, State, County, Municipal or other law to be paid or collected by the Subcontractor or any of its subcontractors or vendors or any other person or persons acting for, through or under it or any of them, by reason of the performance of the Work or the acquisition, ownership, furnishing or use of any materials, equipment, supplies, labor, services or other items for or in connection with the Work.
3. All pension, welfare, vacation, annuity and other union benefit contributions payable under or in connection with labor agreements with respect to all persons, by whomsoever employed, engaged in the Work to be performed and furnished under this Agreement.

In furtherance of, and in addition to the agreements, duties obligations and responsibilities of the Subcontractor with respect to the payment of sales, use, personal property and other taxes set forth in Articles IV and XVI of this Agreement, the Subcontractor agrees to reimburse and otherwise indemnify Contractor and the Owner for any expenses, (including legal fees incurred in connection with claims or litigation against third parties) arising from, or related to the Subcontractor's failure to pay any sales, use, personal property or other taxes based upon labor, services, materials, equipment or other items acquired, performed, furnished or used for or in connection with the Work.

Patents

ARTICLE XVII. The Subcontractor hereby agrees to indemnify, protect and save harmless Contractor and the Owner from and against any and all liability, loss or damage and to reimburse Contractor and the Owner for any expenses, including legal fees to which Contractor and the Owner may be put because of claims or litigation with third parties on account of infringement or alleged infringement of any letters patent or patent rights by reason of the Work or materials, equipment or other items used by the Subcontractor in its performance.

Disputes

ARTICLE XVIII. The parties recognize that problems and disputes between them may occur and that it is preferable for them to reach an amicable resolution of same without the need to resort to formal dispute resolution procedures. In that regard, the parties pledge to participate in good faith in voluntary and non-binding Alternate Dispute Resolution (ADR) procedures as set forth herein. The procedure for requesting such an ADR process shall begin with a written notice of a request for ADR delivered by one party hereto to the other. Within 14 days following the receipt of such notice, lead representatives of Subcontractor and Contractor shall meet in an effort to resolve the dispute. In the event that the dispute remains unresolved after the lead representatives meet, a meeting shall take place between the President of Subcontractor and the General Manager or Operations Manager of Contractor within 20 days thereafter. In the event that the dispute remains unresolved after the President/Manager meeting, the parties will participate in a mediation conducted by a neutral mediator as a condition precedent to addressing the dispute in any other forum, unless both parties waive this condition precedent in writing.

Thereafter, the parties acknowledge and agree that the preferable manner and forum in which disputes may be addressed differs depending upon various factors associated with the dispute. Accordingly, the parties agree that the forum and manner for the resolution of disputes shall be as set forth below and the parties further agree to waive the right to trial by jury so as to facilitate resolution of disputes in such a forum and manner:

- A. In the event the matter in dispute between Contractor and Subcontractor includes a claim or matter that is or will be the subject of dispute resolution, in a forum or by a procedure dictated or determined by a third party or pursuant to an agreement between Contractor and that third party, Subcontractor and Contractor agree that Subcontractor may be joined by Contractor in such forum and the dispute between Contractor and Subcontractor shall be resolved in such forum and in accordance with the applicable procedures. More specifically and to afford greater clarity in this

regard, the parties acknowledge the possibility that a claim may be brought by a third party alleging personal injury or property damage, and that such third party claim may be brought in a court of law. Further, the parties acknowledge that a dispute may arise between Subcontractor and Contractor that is the subject of a related dispute between Contractor and Owner, and that the forum for resolving the dispute between Owner and Contractor may be established in the General Contract (for example, arbitration or litigation, as may be applicable). The parties acknowledge the potential for inefficiencies, inconsistent determinations and the lack of judicial economy that would result from having the related dispute between Subcontractor and Contractor addressed and resolved in a different forum. Therefore, the parties agree that the forum and process for resolving such related disputes shall be determined by this subparagraph so as to facilitate resolving all related disputes in one forum and process. Accordingly and without limitation, the provisions regarding resolution of disputes in the General Contract are expressly incorporated herein by reference and shall be applicable to such related disputes in which Subcontractor may be joined as a party.

- B. Should the matter in dispute not be subject to subparagraph A immediately above, the parties agree that the forum and manner by which disputes between Contractor and Subcontractor shall be as follows:
1. Arbitration shall be had either with ADR Services, Inc. or JAMS ("Judicial Arbitration and Mediation Services"), as the parties may agree, in their Los Angeles County or San Francisco County offices, depending on which offices are geographically closer to the Work, in accordance with the JAMS rules pertaining to engineering and construction disputes as said rules may be in effect at the time the arbitration is initiated, without regard to the amount in dispute. If the parties are unable to agree, then arbitration of the dispute will be referred to JAMS. Should any party refuse or neglect to appear or participate in arbitration proceedings, the arbitrator is nonetheless empowered to decide the controversy in accordance with whatever evidence may be presented.
 2. If any party refuses to engage in arbitration after being requested to do so in accordance with this Agreement, the other party may institute proceedings before the Superior Court in the County where jurisdiction lies to enforce the Arbitration provision of this Section by way of a petition to compel arbitration, motion and other legal or equitable action.
 3. It is the intent of the parties that the arbitrator be guided by the fact that various claims and issues, or the dispute in its entirety, may be resolved by dispositive motion (including but not limited to motions akin to Cal. Code Civ. Proc. Sections 437c and 438, with timing on such motions as the arbitrator(s) deem appropriate). Accordingly, the parties agree that the arbitrator should be guided by the parties' interest in the efficiency and judicial economy of having the arbitrator entertain dispositive motions regarding all or a portion of a matter in dispute as opposed to requiring a full hearing of all issues before so doing, as is authorized by JAMS Engineering and Construction Arbitration Rules & Procedures Rule 18.
 4. The parties consent and agree that any arbitration under this Agreement may, at the option of the parties, by consolidation, joinder or otherwise, include other persons involved in or affected by the decision in such arbitration, specifically including other subcontractors.
 5. Unless the parties agree otherwise, an arbitration involving less than \$1,500,000 in dispute shall be conducted by one arbitrator, and an arbitration involving \$1,500,000 or more in dispute shall be conducted before 3 arbitrators whose determination shall be reached by majority vote of the arbitration panel.

Subcontractor further agrees that in the event that it suffers damages, cost or expenses or otherwise intends to pursue a recovery that arises out of or relates to the performance of work by another subcontractor to or under Contractor, Subcontractor's sole remedy shall be as against that responsible subcontractor and Subcontractor shall not pursue a remedy from Contractor.

Subcontractor shall continue with the diligent performance of Work pursuant to this Subcontract and follow and abide by directions and instructions issued by Contractor during the pendency of any dispute, including dispute resolution procedures, ADR procedures, arbitration or litigation.

The right of Contractor to seek or recover attorneys' fees pursuant to this Agreement, including as set forth in Articles III, IV, XIV, XVI, XVII, XVIII, XXII, XXIII and XXV, is limited to fees incurred as damages to the Contractor, and does not include fees incurred for prosecuting direct claims against the Subcontractor, or defending claims by the Subcontractor against Contractor. Nothing contained in this Agreement confers to Contractor or Subcontractor the right to collect attorneys' fees and costs as prevailing parties in connection with claims either may assert against the other relating to the breach of any provision of this Agreement.

All claims, suit or demands by Subcontractor as against Contractor or Owner shall be brought within the earlier of one year following Subcontractor's achieving substantial completion for the Subcontractor's Work or within one year of Contractor's notice of default in the event that Contractor has taken any action in accordance with Article XI, and Subcontractor hereby agrees that all relevant statutes of limitations shall be deemed reduced to such time period, to the fullest extent permitted by law.

**Mechanics'
Liens &
Claims**

Subcontractor acknowledges that its rights to remedies pursuant to California Mechanic's Lien law, Stop Notice and Design Professional Lien law (collectively referred to herein as "Lien") shall be governed, to the fullest extent permitted by law, by this clause. Subcontractor agrees that its rights to pursue a Lien shall be limited to that portion of its subcontract price which is unpaid and due under the terms of the subcontract at the time of recording a Lien claim or filing a Stop Notice. Subcontractor agrees that it shall not record Liens or file Stop Notices for any sum which is not due hereunder and specifically agrees and covenants that it will not record Liens or file Stop Notices for sums which it may contend are due as damages by reason of delays, accelerations or other such claims, unless such sums are specifically agreed to be due to Subcontractor by written contract modification signed by all parties. Subcontractor agrees that its Lien rights, whatever they may be, are reduced by each payment made to Subcontractor by Contractor or any other party on behalf of Contractor. Subcontractor acknowledges that a Lien recorded by it or Stop Notice filed by it may be disruptive of project finances and could have an adverse impact on the Contractor's relationships with the Owner and its other subcontractors. Therefore, Subcontractor further agrees that if it records a Lien or files

a Stop Notice, which is not permitted by law, or which contains claims which are not permissible hereunder or pursuant to law, or which is negligently or purposefully overstated, Contractor shall be entitled to recover from Subcontractor all of Contractor's costs and damages arising therefrom, and shall further be held harmless and indemnified by Subcontractor from all claims of owner and other subcontractors arising therefrom.

If any subcontractor, laborer, materialman or supplier of the Subcontractor or any other person directly or indirectly acting for, through or under it or any of them files or maintains a lien or claim, whether a mechanics' lien or an attested account or otherwise, a mechanic's lien or claim against the Project or Premises or any part thereof or any interests therein or any improvements thereon or against any monies due or to become due from the Owner to Contractor or from Contractor to the Subcontractor, for or on account of any work, labor, services, materials, supplies, equipment or other items performed or furnished for or in connection with the Work or under any change order or supplemental agreement for extra or additional work in connection with the Project, the Subcontractor agrees to cause such liens and claims to be satisfied, removed or discharged at its own expense by bond, payment or otherwise within ten (10) days from the date of the filing thereof, and upon its failure to do so Contractor shall have the right, in addition to all other rights and remedies provided under this Agreement and the other Contract Documents or by law, to cause such liens or claims to be satisfied, removed or discharged by whatever means Contractor chooses, at the entire cost and expense of the Subcontractor. The Subcontractor agrees to indemnify, protect and save harmless Contractor and the Owner from and against any and all such liens and claims and actions brought or judgments rendered thereon, and from and against any and all loss, damages, liability, costs and expenses, as well as legal fees incurred in responding to any lien or claim of third parties.

Assignment & Subletting

ARTICLE XIX. To the fullest extent permitted by law, Subcontractor agrees that it shall not assign, sell, transfer, delegate or encumber any rights, duties or obligations arising under this Agreement including, but not limited to, any right to receive payments hereunder, without the prior written consent of Contractor in its sole discretion and the giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments. In the event Subcontractor assigns, sells, encumbers or otherwise transfers its right to any monies due or to become due under this Agreement as security for any loan, financing or other indebtedness (hereafter "Assignment"), notification to Contractor of such Assignment must be sent by certified mail, return receipt requested, to the Purchasing Manager in charge of the business unit responsible for the construction of the Project and the Assignment shall not be effective as against Contractor until Contractor provides its written consent to such Assignment. Subcontractor agrees that any such Assignment shall not relieve the Subcontractor of any of its agreements, duties, responsibilities or obligations under this Agreement and the other Contract Documents and shall not create a contractual relationship or a third party beneficiary relationship of any kind between Contractor and such assignee or transferee. Subcontractor further agrees that all of Contractor's defenses and claims arising out of this Agreement with respect to such Assignment are reserved unless expressly waived in writing by a duly authorized corporate officer. Subcontractor hereby agrees to indemnify and hold harmless Contractor from and against any and all loss, cost, expense or damages Contractor or Owner has or may sustain or incur in connection with such Assignment.

Termination for Convenience

ARTICLE XX. Contractor shall have the right at any time and for any reason, by written notice to the Subcontractor, to terminate this Agreement without cause and require the Subcontractor to cease work hereunder. In the event of such a termination for convenience, the Subcontractor shall be entitled to payment pursuant to the terms of the Agreement only for all Work performed as of the date of termination, together with reasonable costs of demobilization and such other reasonable costs as may be encountered by the Subcontractor and directly attributable to such termination provided that such amount shall be reduced by all amounts for which Subcontractor is liable or responsible hereunder. However, the Subcontractor shall only be entitled to profit on that portion of the Work actually performed and approved for payment to the date of termination together with retainages held upon payments made prior thereto. Subcontractor waives any claim for loss of anticipated profits or other damages in the event Contractor exercises this clause.

Guarantees

ARTICLE XXI. The Subcontractor hereby guarantees the Work to the full extent provided in the Plans, Specifications, General Conditions, Special Conditions and other Contract Documents.

The Subcontractor shall expeditiously remove, replace and/or repair at its own expense and at the convenience of the Owner any faulty, defective or improper Work, materials or equipment existing or discovered within one (1) year from the date of the acceptance of the Project as a whole by the Architect and the Owner or for such longer period as may be provided in the Plans, Specifications, General Conditions, Special Conditions or other Contract Documents.

Without limiting the generality of the foregoing, the Subcontractor warrants to the Owner, the Architect and Contractor, and each of them, that all materials and equipment furnished under this Agreement will be of first class quality and new, unless otherwise required or permitted by the other Contract Documents, that the Work performed pursuant to this Agreement will be free from defects and that the Work will strictly conform with the requirements of the Contract Documents. Work not conforming to such requirements, including substitutions not properly approved and authorized, shall be considered defective. All warranties contained in this Agreement and in the Contract Documents shall be in addition to and not in limitation of all other warranties or remedies required and/or arising pursuant to applicable law. Failure of Subcontractor to honor and satisfy the foregoing and any other warranties or guarantees required of the Subcontractor under the Contract Documents, shall constitute a default by Subcontractor.

Accident Prevention & Other Policies

ARTICLE XXII. The Subcontractor agrees that the prevention of accidents to workmen and property engaged upon or in the vicinity of the Work is its responsibility. The Subcontractor agrees to comply with all Federal, State, Municipal and local laws, ordinances, rules, regulations, codes, standards, orders, notices and requirements concerning safety as shall be applicable to the Work, including, among others, the Federal Occupational Safety and Health Act of 1970 and the Clean Water Act, as amended, and all standards, rules, regulations and orders which have been or shall be adopted or issued thereunder, and with the safety standards established or imposed during the progress of the Work by Contractor. When so ordered, the Subcontractor shall stop any part of the Work which Contractor deems potentially unsafe, noncompliant or in violation until corrective measures satisfactory to Contractor have been taken, and the Subcontractor agrees that it shall not have nor make any claim for damages growing out of such stoppages. Should the Subcontractor neglect to take such corrective measures, Contractor may do so at the cost and expense of the Subcontractor and may deduct the cost thereof from any payments due or to become due to the Subcontractor. Failure on the part of Contractor to stop unsafe practices shall in no way relieve the Subcontractor of its responsibility therefor.

This Subcontractor acknowledges the receipt of "Contractor's "Corporate Safety, Health and Environmental Policy", "Substance Abuse Policy", "Equal Employment Opportunity" policy and "Policy Statement on Harassment." This Subcontractor acknowledges the receipt of "Contractor Corporate Safety, Health and Environmental Policy" and "Contractor Policy Statement on Harassment". Subject to applicable law this Subcontractor further agrees to be bound to these policies as a part of the supplemental and special conditions to the contract for construction of the project, including any amendments or modifications of such policies that Contractor may issue at any time. Subcontractor further acknowledges that Contractor endeavors to employ on its projects robust programs with respect to safety and storm water management, as well as compliance with relevant laws and regulations, including, without limitation, OSHA and the Clean Water Act. Such programs may include aggressive measures and requirements, such as reporting, training of personnel and inspections that may be considerably above and beyond minimum standards. Subcontractor agrees to comply with any and all requirements Contractor may impose in connection with such programs and policies, whether as part of this Subcontract or hereafter, and the cost and expense of such compliance shall be borne by the Subcontractor.

In the event that hazardous substances of a type of which an employer is required by law to notify its employees are being used or stored on the site by the Subcontractor, the Subcontractor's subcontractors and anyone directly or indirectly employed or otherwise retained by them or either of them, the Subcontractor shall immediately provide written notice of the chemical composition thereof (including, without limitation, a copy of the applicable Material Safety Data Sheet) to Contractor in sufficient time to permit compliance with such laws by Contractor, other subcontractors and other employers on the site. In the event that the Subcontractor encounters on the site material reasonably believed to be hazardous substances (including, without limitation, asbestos or polychlorinated biphenyl) which has not been rendered harmless, the Subcontractor shall immediately stop Work in the area affected and immediately report the condition to Contractor in writing. Work in the affected area shall resume when such hazardous substances have been rendered harmless or removed as determined by Contractor in its sole and absolute discretion. To the extent of Subcontractor's responsibilities hereunder, Subcontractor shall indemnify and save harmless Contractor from and against any and all loss, injury, claims, actions, proceedings, liability, damages, fines, penalties, cost and expenses, as well as legal fees incurred in responding to claims or actions of third parties, governmental agencies or regulatory authorities, caused or occasioned directly or indirectly by the Subcontractor in regard to such hazardous substances.

**Assumption of
Liability &
Indemnity**

ARTICLE XXIII. Throughout this Agreement, the "Indemnified Party (ies)" means Contractor, the Owner, any party required to be indemnified pursuant to the General Contract, and any of their respective officers, agents, servants, or employees, and affiliates, parents and subsidiaries.

To the fullest extent permitted by law, the Subcontractor hereby assumes the entire responsibility and liability for any and all physical and economic, actual or potential damage or injury of any kind or nature whatever (including death, business interruption or loss of use resulting therefrom) to all persons and entities, whether employees of any tier of the Subcontractor or otherwise, or to all property; or as a result of a perceived risk of such damage or injury (including actions taken to avoid or contain such actual or potential damage or injury, whether required or incurred by a public authority or otherwise); caused by, resulting from, arising out of or occurring in connection with the Subcontractor's Work, Subcontractor's breaches of obligations under this Agreement, or its willful or negligent acts or omissions in the execution of the Work, or in preparation for the Work, or any extension, modification, or amendment to the Work by change order or otherwise.

Should any claims for such physical and economic, actual or potential damage or injury (including death resulting therefrom) be made or asserted, whether or not such claims are based upon an Indemnified Party's alleged negligence or participation in the wrong or upon any alleged breach of any statutory duty or obligation on the part of an Indemnified Party, to the full extent permitted by law, including without limitation California Civil Code Sections 2782 and 2782.05, if applicable, the Subcontractor agrees to indemnify and save harmless the Indemnified Party from and against any and all such claims and further from and against any and all loss, cost, expense, liability, damage, penalties, fines or injury, including legal fees and disbursements, that the Indemnified Party may directly or indirectly sustain, suffer or incur as a result thereof and the

Subcontractor agrees to and does hereby assume, on behalf of the Indemnified Party, the immediate defense of any action at law or in equity which may be brought against the Indemnified Party upon or by reason of such claims and to pay on behalf of the Indemnified Party, upon demand, the amount of any judgment that may be entered against the Indemnified Party in any such action. Nothing contained in this Agreement requires Subcontractor to indemnify the Indemnified Party for Indemnified Party's own active negligence or willful misconduct.

To the fullest extent permitted by law, including without limitation California Civil Code Sections 2782 and 2782.05, if applicable, Subcontractor's duty to defend, save harmless and indemnify the Indemnified Parties is effective immediately upon tender of written notice by an Indemnified Party requesting that Subcontractor undertake its duty to defend and indemnify the Indemnified Parties. Subcontractor will provide its written acceptance or denial of the Indemnified Party's tender no later than twenty (20) days after receipt thereof, as Subcontractor agrees that twenty (20) days is a reasonable time period for Subcontractor to respond. If Subcontractor fails to provide written acceptance to the Indemnified Parties within twenty (20) days of such tender of written notice by an Indemnified Party, or if Subcontractor does not elect to provide a defense to Indemnified Parties as provided in California Civil Code Sections 2782 and 2782.05, if applicable, Subcontractor will be liable to the Indemnified Parties for all attorneys' fees and costs of defense to the fullest extent permitted by applicable law, including the fees and costs apportioned to the Subcontractor.

Concurrently with its written notice of acceptance of an Indemnified Party's tender, and so as to enable the Indemnified Parties to protect their interests, Subcontractor shall provide written notice to an Indemnified Party if, in any respect, the Subcontractor contends that the defense of any claim or portion thereof is outside the scope of a complete defense assumed by Subcontractor. Subcontractor shall have a continuing obligation to provide such written notice prior to providing legal services for which Subcontractor may contend is outside the scope of the complete defense assumed by Subcontractor. The Subcontractor's failure to provide such written notice shall conclusively establish that a complete defense of all claims is being provided by Subcontractor and that no part of the defense provided is outside the scope of that complete defense.

Should Subcontractor elect to appoint counsel to defend an Indemnified Party, including under California Civil Code Sections 2782 and 2782.05, if applicable, only counsel that is (a) experienced in and capable of handling matters that are the subject of the tender and, (b) is free from conflicts and other bias or prejudice towards the Indemnified Parties, may be appointed by Subcontractor.

Subcontractor acknowledges and agrees that the allocation or reallocation of attorneys' fees and costs of defense in accordance with California Civil Code Sections 2782 and 2782.05, if applicable, by an Indemnified Party need not be established with specificity or by other empirical analysis or finite precision. As such, Subcontractor and Indemnified Parties further agree that all that is required is for the Indemnified Party to provide a general, but reasonable, allocation based on the facts then known to the Indemnified Party.

A defense or objection by Subcontractor regarding its allocated fees and costs under California Civil Code Sections 2782 and 2782.05 may be raised only after such allocation has been the subject of a request for reallocation by Subcontractor made within 30 days after full and final determination of the claim. Any dispute between Subcontractor and Indemnified Parties regarding such an allocation or a reallocation of fees and costs shall be resolved through binding arbitration, except as otherwise specifically provided in this paragraph. The parties may elect to retain a mutually selected arbitrator through JAMS or ADR Services Inc., and if they are unable to agree, any party may institute arbitration by serving a notice of demand for arbitration on the other party and filing same with JAMS. Indemnified Parties shall have the right to join in such arbitration all other potential indemnitors or subcontractors with whom allocation or reallocation may be an issue. Unless otherwise agreed by the parties, the arbitrators shall endeavor to have the arbitration take place within thirty (30) days of the joining of all parties and appointment of the arbitrator in accordance with the JAMS rules pertaining to engineering and construction disputes as said rules may be in effect at the time the arbitration is initiated, without regard to the amount in dispute. The arbitrators shall be guided by the parties' preference to limit or avoid costly or time consuming discovery and the above stated requirement that the Indemnified Party need only present a general, but reasonable, allocation based on the facts then known to the Indemnified Party. The award rendered by the arbitrator shall be final, binding and non-appealable, and judgment may be entered thereon in accordance with applicable law of any court having jurisdiction thereof. Notwithstanding the foregoing, to the extent Subcontractor and Indemnified Parties are bound to any dispute resolution procedure that is the subject of a related dispute regarding allocation or reallocation between Contractor and Owner as established in the General Contract (for example, arbitration or litigation, as may be applicable), Subcontractor and Indemnified Parties agree to adjudicate their dispute as to reallocation of defense costs and indemnity obligations in the forum and process for resolving such related disputes with the Owner.

In the event that any such claims, loss, cost, expense, liability, damage, penalties, fines or injury arise or are made, asserted or threatened against the Indemnified Party, Contractor shall have the right to withhold from any payments due or to become due to the Subcontractor an amount sufficient in its judgment to protect and indemnify the Indemnified Party from and against any and all such claims, loss, cost, expense, liability, damage, penalties, fines or injury, including legal fees and disbursements, or Contractor in its discretion may require the Subcontractor to furnish a surety bond satisfactory to Contractor guaranteeing such protection, which bond shall be furnished by the Subcontractor within five (5) days after written demand has been made therefor.

Nothing in this Agreement shall be deemed to relieve the Subcontractor of its immediate duty to defend any and all Indemnified Parties, as specified in this Agreement, pending a determination of the respective liabilities of the Subcontractor, and the Indemnified Parties, by legal proceeding or agreement.

In furtherance to but not in limitation of the indemnity provisions in this Agreement, Subcontractor hereby expressly and specifically agrees that its obligation to indemnify, defend and save harmless as provided in this Agreement shall not in any way be affected or diminished by any statutory or constitutional immunity it enjoys from suits by its own employees or from limitations of liability or recovery under worker's compensation laws.

Nothing in this Agreement shall be deemed to relieve the Subcontractor of its obligations and responsibilities under a project wrap-up insurance program.. To the fullest extent allowed by law, including without limitation California Civil Code Section 2782.9, where there are claims for losses and costs covered by such wrap-up program, the Subcontractor, if enrolled, shall be required to make a contribution towards the deductibles and/or self-insured retentions under such wrap-up insurance program.

IN THE EVENT THAT THE LAW OF THE STATE IN WHICH THE PROJECT IS LOCATED (OR OTHER APPLICABLE LAW) LIMITS THE INDEMNITY OBLIGATIONS OF THE SUBCONTRACTOR, THEN THE INDEMNITY OBLIGATIONS OF THE SUBCONTRACTOR SHALL BE ENFORCED TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, AND THIS ARTICLE SHALL BE CONSTRUED TO CONFORM TO SUCH LAW.

Insurance

ARTICLE XXIV. Insurance.

A. Required Insurance

Before commencing the Work, the following insurance coverages from insurance companies satisfactory to Contractor shall be in place and maintained until completion and final acceptance of the Work:

1. WORKERS' COMPENSATION in accordance with laws of the State in which the Work is situated, and EMPLOYERS' LIABILITY INSURANCE in the amount of \$1,000,000.
2. COMMERCIAL GENERAL LIABILITY INSURANCE INCLUDING COMPLETED OPERATIONS, CONTRACTUAL LIABILITY INSURANCE AGAINST THE LIABILITY ASSUMED HEREINABOVE, and including INDEPENDENT CONTRACTOR'S LIABILITY INSURANCE if the Subcontractor sublets to another all or any portion of the Work, Personal Injury Liability, Broad Form Property Damage (including completed operations), and Explosion, Collapse and Underground Hazards, with the following minimum limits:(Coverage shall be equivalent to current ISO Occurrence Form). No exclusions or restrictions for Crane usage will be permitted.

\$ SDS /Occurrence

\$ SDS General Aggregate

Subcontractor has elected to obtain the above insurance coverages set forth in paragraphs 1 and 2 above in the manner set forth in the Subcontractor Election A, B or C (with Subcontractor Election B having a further coverage option that is stated in, and may be elected by checking, Sub-Part B-1) that is checked below (Note: only one of Subcontractor Election A, B or C is to be selected, however Subpart B-1 may also be selected but only if Subcontractor Election B is selected):

SDS Subcontractor Election A). The above insurance coverages shall be provided by insurance companies selected by the Subcontractor. Contractor shall have the right, without limitation, to reject any insurance company selected by Subcontractor that has an A.M. Best rating of less than A or Standard and Poor's rating of less than AA or a Moody's rating of less than Aa. This insurance coverage shall include Products and Completed Operations coverage which Subcontractor agrees to maintain for a period equal to the statute of repose in the state in which the project is located. Subcontractor further agrees that it shall require each of its sub-subcontractors to provide the above insurance coverages subject to the terms and conditions set forth below. All costs are included in the Price and are to be paid by the Subcontractor.

or

SDS Subcontractor Election B). The above insurance coverages shall be provided through a consolidated insurance program that insures Subcontractor and its eligible lower tier subcontractors, which program has been made available to Subcontractor by Contractor, as described and with limits of liability, terms and conditions set forth in the Contract Documents, including, but not limited to, the CCIP Manual, and Subcontractor agrees to all terms and conditions therein, and makes all representations and warranties, associated therewith. Subcontractor acknowledges and agrees i) that insurance costs will be incurred to provide the above insurance coverages under the consolidated program; ii) that as opposed to Subcontractor including such insurance costs in the Price and paying such costs directly, the Price does not include insurance costs for the above insurance coverages, iii) that it is more convenient and efficient for Contractor to pay such insurance costs on Subcontractor's and Subcontractor's eligible lower tier subcontractor's behalf, and iv) that Contractor is authorized by Subcontractor to pay such insurance premiums on Subcontractor's behalf and Subcontractor's eligible lower tier subcontractor's behalf.

SDS Sub-Part B-1 to Subcontractor Election B. By checking this further election, Subcontractor agrees that it has selected Subcontractor Election B with respect to providing the above insurance coverages for eligible lower tier subcontractors engaged by or through Subcontractor to the extent permitted by the Contract Documents (including the CCIP Manual), however, Subcontractor agrees that as to Subcontractor itself, the above insurances will be provided by Subcontractor in accordance with the terms and conditions of Subcontractor Election A above. Accordingly, Subcontractor itself shall be deemed an "Excluded Party" with respect to the consolidated insurance program as described in the Contract Documents (including the CCIP Manual). Any other "Excluded Party" lower tier subcontractors (if applicable) with respect to the consolidated insurance program arranged by Contractor shall be required to procure their own insurance coverages at their expense. For Subcontractor's lower tier subcontractors that are not an "Excluded Party", the above insurance coverages shall be provided through the consolidated insurance program as described in Subcontractor Election B to the extent permitted by the Contract Documents (including the CCIP Manual).

Subcontractor represents and warrants that all amounts, information and data that Subcontractor and its lower tier subcontractors has provided or will provide in connection with CCIP applications and other related forms and documents, including estimated payroll and insurance costs, are, or shall be when submitted, true and accurate. Subcontractor represents and warrants that the amount of estimated unburdened payroll (payroll without benefits or overtime, unless the overtime portion is included as required by the regulations of the State in which the project is located) actually used by Subcontractor and its eligible lower tier subcontractors in calculating the Price is \$ **SDS** ("Initial Payroll Estimate" or "Estimated On-Site Payroll") (if Sub-Part B-1 is elected, this amount only pertains to Subcontractor's eligible lower tier subcontractors). Subcontractor further agrees that all such amounts, data and information, including the estimated unburdened payroll amount used to calculate the Price, shall be to subject to audit and verification if Contractor or the CCIP Administrator elects to do so and Subcontractor agrees to cooperate fully and provide documents and other records requested in connection with such audit and verification and to cause its lower tier subcontractors to do the same. Subcontractor acknowledges that such amounts, information and data or such other amounts as verified in accordance with the CCIP Manual or through audit may be used to calculate final and interim cost adjustments to the Price and/or payments to Subcontractor (at Contractor's discretion) as described in the CCIP Manual. Contractor and the CCIP Administrator shall not be required to use any amount greater than the foregoing "Estimated On-Site Payroll" as the unburdened payroll amount when calculating such adjustments for Subcontractor and its lower tier subcontractors as described in the CCIP Manual.

or

SDS Subcontractor Election C). The above insurance coverages shall be provided through an Owner Controlled Insurance Program (OCIP) as described and with limits of liability set forth in the Contract Documents and Subcontractor agrees to all terms, and makes all representations and warranties, associated therewith.

Subcontractor acknowledges that if any of the above insurance coverages are provided through a consolidated program arranged pursuant to Subcontractor Election B, Subcontractor Election B-1 or Subcontractor Election C, such coverage will not apply to any operations off of the premises (as defined in the CCIP Policy or Manual or OCIP Policy or Manual) and Subcontractor shall provide and maintain the above insurance coverages with respect to off-premises operations. Subcontractor further agrees that in the event that the insurance coverage provided by a consolidated insurance program (Subcontractor Election B or C) is cancelled prior to the completion of the Work, subcontractor shall provide the insurance coverage (set forth in paragraphs 1 and 2). Subcontractor further acknowledges and represents i) that it was not required to select any particular election provided for above and was free to choose Subcontractor Election A if it preferred to apply for and obtain insurance itself, ii) that Subcontractor has reviewed the other Subcontractor Elections available for this Project and has chosen the election selected above, and iii) that Subcontractor has satisfied itself that the Subcontractor Election checked above is preferable to Subcontractor for reasons of convenience, economics and/or coverage afforded.

3. COMMERCIAL AUTOMOBILE LIABILITY INSURANCE covering all owned, non-owned and hired automobiles used in connection with the Work, with the following minimum limits:

Combined Single Limit \$ SDS /accident

4. ALL RISK CONTRACTOR'S EQUIPMENT INSURANCE COVERAGE shall be provided by all Subcontractors utilizing a crane or other equipment in connection with the performance of the Work and insured to the full value of equipment.

B. Insurance Conditions

The following terms and conditions are applicable to all insurance:

Before commencing the Work, the Subcontractor shall furnish a certificate(s), satisfactory to Contractor from each insurance company showing that the above insurances (1, 2 Subcontractor Election A, 3 and CGL operations off of the premises under 2 Subcontractor Election B and C, and 4) are in force, stating policy numbers, dates of expiration, and limits of liability thereunder, and further providing that should any of the described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions. Subcontractor shall advise Contractor of the amount of any Deductible or Self-Insured Retention that exists on any policies of insurance on the face of the certificates provided. Subcontractor shall be responsible for and agrees to pay and/or reimburse Contractor for any such Deductible or Self-Insured Retention.

The Subcontractor shall name the Indemnified Parties and such other entities as may be reasonably requested as additional insureds under the policies of insurance listed in paragraph A maintained by the Subcontractor (with the exception of Workers Compensation insurance), whether during the performance of the Work or any time thereafter. The coverage to be provided to the additional insureds shall be for all liability arising out of the Work. Subcontractor will submit a certificate of insurance and a copy of endorsements to the insurance policies listing all parties required to be named by Subcontractor as additional insureds. Subcontractor hereby waives all rights of recovery from Contractor and the Indemnified Parties, including but not limited to rights of subrogation, with respect to any matter, claim or suit that is required to be covered by insurance to be maintained by Subcontractor pursuant to the Contract Documents.

It is expressly agreed by and between Subcontractor and Contractor that all insurance, whether issued on a primary or excess basis, afforded the additional insureds shall be primary insurance to any other insurance available to the additional insureds and that any other insurance carried by the additional insureds shall be excess of all other insurance carried by the Subcontractor and shall not contribute with the Subcontractor's insurance. Subcontractor further agrees that the amount of insurance available to Contractor and the additional insureds shall be for the full amount of the loss up to policy limits of liability and shall not be limited to the minimum requirements of this Subcontract. Subcontractor further agrees to provide endorsements on its insurance policies that shall state the foregoing; however, Subcontractor's failure to provide such endorsement shall not affect Subcontractor's agreement hereunder.

If the Subcontractor fails to procure and maintain such insurance, if required, Contractor shall have the right, but not the obligation, to procure and maintain said insurance for and in the name of the Subcontractor and the Subcontractor shall pay the cost thereof and shall furnish all necessary information to make effective and maintain such insurance or at Contractor's option, Contractor may offset the cost incurred by Contractor against amounts otherwise payable to Subcontractor hereunder. Subcontractor further agrees that in the event of such failure to procure and maintain such insurance, Subcontractor shall be liable for all amounts which would have been payable pursuant to the insurance required by this Subcontract. If, in Contractor's discretion, Contractor is concerned that any insurance company selected by Subcontractor has, at any time, faced diminished financial strength or that the insurance company may no longer provide the same level of financial strength (such as a decline in an A. M. Best, Standard and Poor's or Moody's rating), Contractor may require that Subcontractor provide replacement insurance coverage through an insurance company satisfactory to Contractor.

IN THE EVENT THAT THE LAW OF THE STATE IN WHICH THE PROJECT IS LOCATED (OR OTHER APPLICABLE LAW) LIMITS THE ADDITIONAL INSURED COVERAGE THAT CONTRACTOR MAY REQUIRE FROM SUBCONTRACTOR, THEN SUBCONTRACTOR SHALL BE REQUIRED TO OBTAIN ADDITIONAL INSURED COVERAGE TO THE FULLEST EXTENT OF COVERAGE AND LIMITS ALLOWED BY APPLICABLE LAW AND THIS CONTRACT SHALL BE READ TO CONFORM TO SUCH LAW

Bonds

ARTICLE XXV. The Subcontractor shall furnish to Contractor a performance bond in the amount of \$ SDS and a separate payment bond in the amount of \$ SDS the form and contents of such bonds and the Surety or Sureties thereon to be satisfactory to Contractor. Such bonds shall be furnished to Contractor within ten (10) calendar days after Subcontractor has executed this Agreement or within such other time period agreed to by Contractor in writing. In the event Subcontractor fails to furnish such bonds to Contractor within the time period as hereinabove provided, such failure shall constitute a default under this Agreement in which event Contractor shall have all of the rights and remedies provided in Article XI hereof with respect to default on the part of Subcontractor including, without limitation, the right to terminate this Agreement.

Without limiting the responsibilities of Subcontractor and its Surety under the terms of this Agreement, Subcontractor and its Surety hereby agree to promptly pay all lawful claims of subcontractors, materialmen, laborers, persons, firms or corporations for labor or services performed or materials, supplies, machinery equipment, rentals, fuels, oils, tools, appliances, insurance and other items furnished, used or consumed in connection with the prosecution of the Work provided for in said Subcontract and any and all modifications thereof, and shall indemnify and save harmless Contractor of and from all liability loss, damage and expense, including interest, and costs, which Contractor and/or its Surety may sustain by reason of Subcontractor's or its Surety's failure to do so.

Subcontractor and its Surety hereby agree to execute and deliver to Contractor when requested in connection with the issuance of change orders under this Agreement, Rider "A" amendments (or other documents as Contractor may require) increasing the amount (Penal Sum) of the Payment and Performance Bonds furnished by the Subcontractor. The reasonable premiums or other charges paid by the Subcontractor for the procurement of the Rider "A" amendments will be paid as a change to this Agreement.

Severability

ARTICLE XXVI. In the event that any provision or any part of a provision of this Agreement shall be finally determined to be superseded, invalid, illegal or otherwise unenforceable pursuant to applicable laws by an authority having jurisdiction, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provisions or parts of provisions of this Agreement, which shall remain in full force and effect as if the unenforceable provision or part were deleted.

**Business
Enterprise
Compliance**

ARTICLE XXVII. In the event that the Project or General Contract is subject to any federal, state, or local program(s) requiring Contractor or its subcontractors to meet certain goals or commitments with regard to the award of subcontracts or supply contracts to small and/or disadvantaged businesses, including but not limited to minority owned, woman owned, veteran owned and local businesses, then the provisions of this Article shall apply. Subcontractor acknowledges that: a) the Federal Small Business Program applies if the General Contract is a direct federal government contracts (i.e., contracts awarded by a federal executive agency); b) the Disadvantaged Business Enterprise Program applies to projects that are funded in whole or in part with federal funds, including those funded through a grant awarded to the Owner; c) there are state and local programs that may apply to public projects that are funded by a state or local government; and d) these programs have different eligibility requirements as well as different methods of counting small business, minority, and other designated categories of participation at all subcontracting levels. Subcontractor agrees that it shall fully understand and comply with the rules and regulations of all such programs to the fullest extent applicable to the General Contract, Subcontract or this Agreement.

A. If Subcontractor is or otherwise satisfies the qualifications or requirements of any of the following, or if Subcontractor has in any way represented or given Contractor reason to believe that such is the case: (a) a small business under the Federal Small Business Program (i.e., a small business, a small disadvantaged business (SDB), a HUBZone small business, a service-disabled veteran-owned small business (SDVOSB), a veteran-owned small business (VOSB), or a women-owned small business (WOSB)) (hereinafter collectively referred to as an "SBE"); (b) a Disadvantaged Business Enterprise (DBE), Minority

Owned Business Enterprise (MBE), or Woman Owned Business Enterprise (WBE), or the functional equivalent under federal, state, or local law (hereinafter collectively referred to as a "DBE"); or (c) a category or status designated by state or local authorities which otherwise classifies or designates certain business entities, collectively referred to as Local Business Enterprises (LBEs); then Subcontractor acknowledges, represents, agrees and warrants that: (i) Subcontractor in fact has such status and has obtained all required federal, state, or local certifications of such status; (ii) Contractor is relying upon such representation and status to fulfill any and all SBE, DBE or LBE goals or commitments Contractor has made to the Owner and/or a government agency or as otherwise required of Contractor; (iii) Subcontractor shall maintain its status as an SBE, DBE or LBE throughout the performance of the subcontract or purchase order; (iv) Subcontractor immediately shall notify Contractor if there is a change in Subcontractor's status as an SBE, DBE or LBE; (v) Contractor has engaged Subcontractor based on Subcontractor's representation that Subcontractor shall perform in such a manner that 100% of Subcontractor's Work and 100% of the Subcontract value shall be eligible for credit towards Contractor's goals and commitments with regard to the award of subcontracts to SBEs, DBEs and/or LBEs; (vi) Subcontractor shall perform in such a manner that Contractor shall be eligible to receive credit towards Contractor's goals and commitments regarding the award of subcontracts to SBEs, DBEs, and/or LBEs for 100% of the Subcontract value; (vii) Subcontractor will not engage in any effort or take any action that would prevent Contractor from receiving 100% credit; (viii) Subcontractor shall engage in a genuine commercially useful function as defined by law and shall not act as a pass-through to sub-subcontractors, suppliers, or vendors who are not SBEs, DBEs or LBEs; (ix) Subcontractor will not engage in any effort to create the appearance of SBE, DBE or LBE legitimacy or participation when in fact it does not exist; and (x) if Subcontractor awards any of its work through sub-subcontract, purchase order, or otherwise, to an SBE, DBE or LBE, then Subcontractor will do so only in a manner that does not affect the ability to receive credit as described above for 100% of the Subcontract value, including awarding same only to SBE, DBE or LBE sub-subcontractors, suppliers, or vendors if and to the extent necessary to achieve this result.

B. If Subpart A. of this Article is not applicable to Subcontractor, then Subcontractor acknowledges and agrees that the obligations and commitments assumed by Contractor with regard to the award of subcontracts to SBEs, DBEs and/or LBEs, have likewise been assumed by Subcontractor pursuant to this Agreement, including but not limited to meeting or exceeding the same percentage or other requirements or goals for each separate category of SBE, DBE and/or LBE employment in connection with the performance of the Work and satisfying all obligations and responsibilities with respect to reporting and documenting same.

C. The provisions of this Subparagraph C. shall be applicable to all Subcontractors. If or when Subcontractor awards any of its work through sub-subcontract, purchase order, or otherwise, to an SBE, DBE or LBE, to the extent permitted or required by this Agreement, then Subcontractor further acknowledges, represents, agrees and warrants that Subcontractor shall: (i) verify that such SBE, DBE or LBE has such status and has obtained all required federal, state, or local certification of such status; (ii) require its SBE, DBE or LBE sub-subcontractors, suppliers, or vendors to maintain their status as an SBE, DBE or LBE throughout the performance of their sub-subcontract, purchase order, or other agreement; (iii) immediately notify Contractor if there is a change in a sub-subcontractor's, supplier's, or vendor's status as an SBE, DBE or LBE; (iv) require all SBE, DBE or LBE sub-subcontractors, suppliers, or vendors to engage in a genuine commercially useful function as defined by law; (v) ensure that all SBE, DBE or LBE sub-subcontractors, suppliers, or vendors are not acting as a pass-through to another sub-subcontractor, supplier, or vendor who is not a SBE, DBE or LBE; and (vi) not permit a sub-subcontractor, supplier, or vendor to engage in any effort to create the appearance of SBE, DBE or LBE legitimacy or participation when in fact it does not exist.

Subcontractor agrees that: (i) Contractor, or its authorized representative, shall have access to and the right to examine and audit all of Subcontractor's records relating to Subcontractor's Work under this Agreement including, but not limited to, lower-tier subcontracts, equipment leases, purchase orders, and other agreements with third parties; (ii) Subcontractor and its sub-subcontractors, vendors and suppliers shall submit any forms, certifications or documents required by Contractor relating to participation on the Project, regardless of whether such forms or documents have been requested or required by the Owner; (iii) failure to honor and comply with any of the terms or conditions of this Article and/or its failure to comply with any applicable law relating to the award of subcontracts to SBEs, DBEs and/or LBEs shall constitute a material breach of this Agreement; (iv) submission by Subcontractor of a monthly requisition for payment or invoice shall constitute a certification by Subcontractor that each and every representation and warranty set forth in this Article is and remains truthful, accurate, and complete, and that Subcontractor is in full compliance with the terms and conditions of this Article, as of the date such requisition or invoice is submitted to Contractor; (v) Contractor may rely on these certifications in making payment to Subcontractor and in making like representations to others; (vi) Contractor shall have the right to withhold payment from Subcontractor if Contractor has reasonable grounds to believe that Subcontractor is not in full compliance with its obligations set forth in this Article; and (vii) that

Subcontractor shall include a provision in all agreements with its sub-subcontractors, vendors and suppliers, whereby such sub-subcontractors, vendors and suppliers acknowledge and agree to conduct their operations and affairs in a manner that ensures that Subcontractor is not in violation of any provision in this Article and to provide forms, certifications and documents as required by Contractor or this Article.

**U.S. Government
Prime Contract**

ARTICLE XXVIII. In the event that the General Contract under which this Subcontract is being issued is a General Contract between Contractor and the United States Government or an agency thereof, additional Federal Acquisition Regulation ("FAR") and agency FAR supplemental provisions are applicable to this Agreement. Such FAR and agency FAR supplemental provisions are contained on the attached document entitled "Federal Supplement" and such provisions are hereby incorporated by reference herein as if set forth at length herein. Subcontractor hereby ratifies and re-affirms its Subcontractor Certifications and Disclosures that Subcontractor signed and submitted with its proposal submitted earlier to Contractor and such Certifications and Disclosures are hereby incorporated herein by reference as if set forth at length herein.

**Entire
Agreement**

ARTICLE XXIX. This Agreement constitutes the entire agreement between the parties hereto. No oral representations or other agreements have been made by Contractor except as stated in the Agreement. This Agreement may not be changed in any way except as herein provided, and no term or provision hereof may be waived by Contractor except in writing signed by its duly authorized officer or agent. Subcontractor acknowledges and represents that it has completed and submitted to Contractor a prequalification questionnaire, that all statements therein and in the attachments to such questionnaire were true, accurate and complete, and remain true, accurate and complete, and that Contractor has relied on truthfulness, accuracy and completeness of such statements and the contents of the attachments thereto in deciding to enter into this Agreement. The marginal descriptions of any term or provision of this Agreement are for convenience only and shall not be deemed to limit, restrict or alter the content, meaning or effect thereof.

The said parties, for themselves, their heirs, executors, administrators, successors and assigns, do hereby agree to the full performance of all of the terms and provisions herein contained.

In Witness Whereof the parties to these presents have hereunto set their hands as of the day and year first above written.

SUBCONTRACTOR		CONTRACTOR	
By: <u>SDS</u>		By: <u>SDS</u>	
Official title: <u>SDS</u>			Vice- President
Witness: <u>SDS</u>		Witness: <u>SDS</u>	
Subcontractor's Federal Employers Identification <u>SDS</u>			
Number (FEIN) _____			
Subcontractor's State Unemployment Ins. No. <u>SDS</u>			
(Insert State and Register No. for State in which the Work is to be performed)			
Subcontractor's License No. <u>SDS</u>			
(Insert License No., if any, for State or locality in which the Work is to be performed)			
Subcontractor's State Sales Tax Registration No. <u>SDS</u>			

**RIDER TO AGREEMENT BY AND BETWEEN TURNER CONSTRUCTION
COMPANY (“TURNER”) AND _____
 (“SUBCONTRACTOR”) FOR THE CALMART PROPERTY REDEVELOPMENT
PROJECT, LOS ANGELES, CALIFORNIA**

This Rider to Agreement is attached to, incorporated in and made a part of that certain Agreement by and between Turner and the Subcontractor for the Work to be performed at or in connection with the Project. If and to the extent any of the terms, provisions or conditions of this Rider conflict with any of the terms, provisions or conditions of the Agreement or any other rider thereto (collectively, this “Agreement”), the terms, provisions and conditions of this Rider shall govern. All capitalized terms not expressly defined herein shall have the meanings ascribed to such terms in the Agreement unless otherwise indicated herein.

1. At the end of the first paragraph of **Article III** (the first paragraph in “Planning and Scheduling”) the following language is hereby added:

The Subcontractor shall cooperate and coordinate with, and perform the Work in conjunction and harmony with, the Contractor, Owner, all separate contractors employed by Contractor, Owner, or any other party on the Project, in such a manner as may be necessary or, in the judgment of the Contractor, desirable to facilitate the prosecution of the Work and completion of the Project expeditiously and economically, consistent with projects of similar scope and intended use in Los Angeles and the best interests of the Owner. The Subcontractor acknowledges that the Owner, directly and through the Design Professionals and the Separate Contractors (as defined in the General Contract), is and shall be actively involved in the development of the Project, and in interaction with the Contractor and the Subcontractor. The Subcontractor understands and agrees that no such involvement or interaction shall be construed to relieve the Subcontractor from the performance of, or to waive or modify in any respect, any of the Work.

2. After the first paragraph of **Article III** (“Planning and Scheduling”) the following language is hereby added:

Substantial Completion is that point in the progress of the Work when (a) the Work or designated portion thereof, as certified by the Owner’s Representative, is sufficiently complete in accordance with the Contract Documents, with all needed systems and equipment operational, to enable the Owner or its Affiliates, or the public, as appropriate, to use and occupy the Project Site or the agreed, defined portion of the Project Site, for its intended use as set forth in the Contract Documents, and (i) after completion of the items identified in the lists prepared pursuant to Section 10.4.3, only minor finish punch list items or similar minor corrective work remains to be completed that do not adversely affect the capability of the Project Site or the designated portion thereof to operate and function safely in the ordinary course of business; (ii) a temporary certificate of occupancy (“TCO”) has been issued, (iii) the commercial units are in rentable condition, and (iv) all Tenant Turnover Requirements, Exhibit CC to the General Contract, have been achieved; and (b) all Certificates shall have been issued. To the extent that the Construction Manager is

unable to obtain a TCO or a Certificate shall have not been issued to due to reasons beyond the Construction Manager's control and at no fault of Construction Manager, including delays caused by City of Los Angeles Department of Building and Safety (LADBS) or other Governmental Authorities or if Owner fails to provide the necessary information to DOB, which is preventing the DOB from issuing a TCO, but the Construction Manager has complied with all of its other obligations set forth in this Section 10.4 and to the extent that such delays in issuing the TCO are beyond normal delays, Construction Manager shall have deemed to complied with Section 10.4, provided that it shall continue to assist the Owner with the procurement of a TCO.

3. After the first sentence of the third paragraph of **Article III** ("Planning and Scheduling") the following language is hereby added:

Subcontractor shall provide reasonable recommendations to the Contractor for value engineering services so that the Owner's objectives of achieving the lowest cost consistent with the standards established by the Owner for the Project. The Subcontractor shall assist the Contractor in the performance of an evaluation of proposed building components and systems relating to initial capital costs, life cycle costs, operating and maintenance costs, energy conservation factors and systems maintenance and longevity, as applicable. The Subcontractor shall assist in applying for and obtaining rebates from energy providers. If certain value engineering services require signoff or approval of a Design Professional, the Contractor shall so notify the Contractor and the Owner, and the Subcontractor value engineering recommendations shall be referred to the Design Professionals for review and approval.

4. After the fourth paragraph of **Article III** ("the first paragraph in "Delays by Subcontractor"), the following language is hereby added under a new heading "Liquidated Damages":

"Liquidated Damages" shall mean the sum per day applicable to each Milestone Event as identified in Exhibit DD of the General Contract, subject to the applicable grace periods set forth therein, if the Milestone Event shall not have been achieved by the applicable date set forth in Exhibit DD, subject to Section 10.8 of the General Contract."

Should the progress of the Work or of the Project be delayed, disrupted, hindered, obstructed, or interfered with by any fault or neglect or act or failure to act of the Subcontractor or any of its officers, agents, servants, employees, subcontractors or suppliers so as to cause a delay in the Substantial Completion of the Work, the Subcontractor shall be responsible for liquidated damages (as set forth in Section 10.8 and Exhibit DD of the General Contract) in the event (i) Construction Manager pays Owner for any liquidated damages; (2) Owner deducts such liquidated damages from amounts owing to Construction Manager. Construction Manager may deduct any liquidated damages that are assessed by Owner as a result of the Subcontractor's fault or neglect or act or failure to act from amounts otherwise owing to the Subcontractor, or, in the alternative, Subcontractor shall promptly pay such liquidated damages to

Construction Manager upon demand.

5. The second paragraph of **Article IV**, “Price,” is hereby deleted and replaced with the following:

It is specifically understood and agreed that the Subcontractor and Contractor acknowledge that there is a risk that the Owner, in breach of its contract with Contractor, may make late payments or may, under certain circumstances such as insolvency, not make required payments to Contractor. The parties furthermore acknowledge their agreement that they shall share the risk of same. As a consequence of the foregoing understanding and consistent with that allocation of risk, the Subcontractor agrees that Contractor’s receipt of payment from the Owner on behalf of the Subcontractor’s requisitions for payment (whether interim requisitions or final requisition, including retainage) shall be, to the fullest extent provided by law, a condition precedent to the right of the Subcontractor to receive payment from Contractor. The parties further acknowledge that the Subcontractor is entitled to pursue any and all rights to which it may be entitled under the California Lien Law in the event that Contractor does not pay the Subcontractor amounts due hereunder, including non-payment resulting from delayed payments or non-payment by the Owner to Contractor. To the extent that this clause is inconsistent with such lien rights, this clause is deemed waived for such purpose only. In the event that Contractor advises Subcontractor that Contractor is unable to pay Subcontractor by reason of Owner’s non-payment to Contractor, Subcontractor agrees that the filing of a lien in full accordance with the Lien Law and the complete prosecution of that lien claim to finality in the courts, and collection therefrom, for the amount due to it shall be a condition precedent to the right of the Subcontractor to file an action in law or equity against Contractor or its surety in connection with the project. Further, nothing herein shall be deemed to abrogate or waive the Subcontractor’s right to file claims against Contractor’s sureties, if any. In the event that Subcontractor files a claim against any or all of Contractor’s sureties, Subcontractor agrees to stay any proceedings against Contractor’s sureties pending the resolution of its mechanic’s lien action to finality in the courts, including collection therefrom. Furthermore, nothing herein is intended to limit or preclude the rights of Contractor under other terms of this Subcontract to backcharges, set-offs or other claims against the Subcontractor in regard to the matters addressed in this Clause or otherwise.

6. In the first sentence and second sentence of the tenth paragraph of **Article IV** (the first paragraph in “Lien by Others”) replace all references to “ten (10) days” to “five (5) days”
7. After last sentence in the fourth paragraph of **Article IV**, “Price” (the first paragraph in “Progress Payment”) add the following sentence:

With each requisition, the Subcontractor shall submit the waiver and release “Conditional Waiver and Release on Progress Payment” and/or “Unconditional Waiver and Release on Progress Payment” in the forms attached to the General Contract as Exhibit

R and Exhibit S.

8. After last sentence in the ninth paragraph of **Article IV**, “Price” (the first paragraph in “Final Payment”) add the following sentence:

The Subcontractor shall provide the affidavit “Conditional Waiver and Release on Final Payment” and/or “Unconditional Waiver and Release on Final Payment” for the Application for Final Payment in the forms attached to the General Contract as Exhibit T and Exhibit U

9. After the third paragraph in **Article VII** (after the second paragraph “Shop Drawings), add the following new paragraphs:

By approving and submitting Submittals (as defined in the General Contract), the Subcontractor represents that it has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that it has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents, and the work of Subcontractors. All modeling shall comply with the requirements set forth in the BIM Specifications, as set forth in Exhibit BB to the General Contract.

Incomplete Submittals or Submittals containing excessive errors will be returned unchecked and any delay caused thereby will be the responsibility of Subcontractor.

10. After the sixth paragraph of **Article IX** (“Change Orders, Additions & Deductions”) add the following paragraph:

Changes may be initiated by Contractor submitting to the Subcontractor a change order request setting forth in detail the nature of the change. Within ten (10) days after receipt of a change order request, the Subcontractor shall furnish to Contractor a change order proposal. Each change order proposal shall include (a) a detailed estimate (on a drawing-by-drawing basis) prepared by Subcontractor’s estimating staff, of the project costs relating to such change, (b) a detailed estimate of such costs (on a drawing-by-drawing basis) for each sub- subcontractor impacted by the change, and (c) a reconciliation of the two estimates. Time and material change orders shall be documented on a day-to-day basis within forty-eight (48) hours after covered Work is accomplished. If a change order proposal is not delivered to Contractor within such period, the Subcontractor shall be deemed to have waived its right to make any claim for an extension of time or adjustment to the Price in connection with the changes which are the subject of said change order proposal or to recover the costs of such changes. When a schedule of unit prices for additions to or deletions from the Work is made a part of this Agreement, and the change order proposal contains unit pricing, such unit pricing shall conform to such schedule of unit prices.

11. The last paragraph of **Article XI**, “Failure to Prosecute, etc.” is hereby deleted and

replaced with the following:

Subcontractor, in addition to any other rights available to Contractor hereunder, agrees to indemnify, hold harmless and defend Contractor and each of the entities defined as “Indemnitees” in the General Contract from and against any and all claims, demands, suits, damages, judgments, liabilities, costs and expenses (including legal fees and disbursements) arising out of or related to Subcontractor's breach of any term of the Agreement.

12. In the fourth sentence of **Article XV** (“Labor to be Employed”), the reference to “three (3) days” is hereby replaced with “two (2) days”.

13. In the first sentence of the sixth paragraph of **Article XVIII** (the third paragraph in “Mechanics’ Liens & Claims”) the reference to “ten (10) days” is hereby replaced with “five (5) days.”

14. The following language is hereby added at the end of **Article XIX** (“Assignment and Subcontracting”):

The Subcontractor acknowledges and agrees that the Contractor, and following an assignment to the Owner, the Owner, shall have the right to assign this Agreement to any party designated by the Owner (“Subcontract Assignee”), and upon and after any such assignment Subcontractor shall render full performance hereof to such Subcontract Assignee and such Subcontract Assignee shall succeed to all of the Contractor’s rights hereunder and shall perform all of the Contractor’s obligations hereunder arising from and after such assignment. Upon an assignment of this Agreement by the Owner, the Owner shall be deemed released from any and all liability under this Agreement provided that the assignee thereunder is acceptable to the Subcontractor, in the exercise of its reasonable judgment.

With respect to the Work to be performed and furnished by the Subcontractor hereunder, the Subcontractor agrees to be bound to the Contractor by each and all of the terms and provisions of the General Contract and the other Contract Documents (as defined in the General Contract), and to assume toward the Contractor all of the duties, obligations and responsibilities that the Contractor by the General Contract and those other Contract Documents assumes toward the Owner, and the Subcontractor agrees further that the Contractor shall have the same rights and remedies as against the Subcontractor as the Owner under the terms and provisions of the General Contract and the other Contract Documents has against the Contractor with the same force and effect as though every such duty, obligation, responsibility, right or remedy were set forth herein in full.

The General Contract shall continue to be a Contract Document and incorporated herein and a part hereof, and Subcontractor shall continue to be bound by the General Contract, as provided in the immediately preceding paragraph, notwithstanding any termination, expiration or cancellation of the General Contract, or the assignment or

reassignment of the General Contract by the Contractor or the Owner

15. The third sentence of **Article XX**, "Termination for Convenience," is hereby deleted and replaced with the following:

However, the Subcontractor shall only be entitled to profit on that portion of the Work actually performed and approved for payment prior to the date of termination together with retainages held upon payments made prior thereto.

16. The following language is hereby added at the end of **Article XXI** ("Guarantees"):

The Subcontractor (excluding those Subcontractors which have only supplied materials and equipment and not installed the same) to the Construction Manager for delivery to the Owner four copies of notarized warranties in the form in the General Contract as Exhibit X for the Work performed under each section of the Specifications. The Subcontractor shall submit all of the warranties to the Construction Manager for delivery to the Owner and the Architect as a prerequisite to Final Payment. The period for such warranties shall not commence until the applicable Subcontract for such warranted Work is closed out by the Construction Manager and Owner pursuant to the requirements of this Agreement.

The Subcontractor expressly agrees that Owner shall be a third-party beneficiary of all of the obligations of the Subcontractor hereunder, including without limitation, the beneficiary of all warranties, expressed or implied, and guarantees which the Subcontractor makes herein relating to materials, equipment, goods, merchandise or products (collectively, "Merchandise") to be sold hereunder by the Subcontractor. Nothing herein shall be construed to make this an agreement between the Owner and the Subcontractor except to the extent provided in the immediately preceding sentence and the Subcontractor acknowledges that it has no contractual rights, expressed or implied, which it can assert against the Owner. Without limiting in any manner any obligations of the Subcontractor with respect to the quality of the Merchandise or any other warranty or guaranty provided by the Subcontractor, the Subcontractor expressly warrants and agrees that the Merchandise to be furnished hereunder shall be merchantable and shall be fit for the purpose for which such Merchandise is purchased.

17. The second and third sentences of the first paragraph of **Article XXIII**, "Assumption of Liability & Indemnity," are hereby deleted and replaced with the following:

The Subcontractor hereby assumes the entire responsibility and liability for any and all actual or potential damage or injury of any kind or nature whatsoever (including without limitation death, business interruption or loss of use resulting therefrom) to all persons and entities, whether employees of the Subcontractor or any tier of the Subcontractor or otherwise, or to all property; or as a result of a perceived risk of such damage or injury (including without limitation actions taken to avoid or contain

such actual or potential damage or injury, whether required or incurred by a public authority or otherwise); caused by, resulting from, arising out of or occurring in connection with the execution of the Work, or in preparation for the Work, or any extension, modification, or amendment to the Work by change order or otherwise. Should any claims for such actual or potential damage or injury (including without limitation death resulting therefrom) be made or asserted, whether or not such claims are based upon an Indemnified Party's alleged active or passive negligence or participation in the wrong or upon any alleged breach of any statutory duty or obligation on the part of an Indemnified Party, the Subcontractor agrees to indemnify and save harmless the Indemnified Party from and against any and all such claims and further from and against any and all loss, cost, expense, liability, damage, penalties, fines or injury, including legal fees and disbursements, that the Indemnified Party may directly or indirectly sustain, suffer or incur as a result thereof and the Subcontractor agrees to and does hereby assume, on behalf of the Indemnified Party, the defense of any action at law or in equity which may be brought against the Indemnified Party upon or by reason of such claims and to pay on behalf of the Indemnified Party, upon demand, the amount of any judgment that may be entered against the Indemnified Party in any such action.

18. After the last paragraph in **Article XIV** (titled "Ethics and Compliance"), add the following new paragraphs titled "Compliance with Applicable Provisions, and Future Agreements":

The Subcontractor shall comply with any and all requirements of the Applicable Provisions, which may be attached hereto as Exhibit H to the General Contract. Excepting any Applicable Provisions, the Owner may, at its election, deliver to the Construction Manager the provisions that govern or otherwise pertain to the Project of any one or more agreements or instruments in respect of the Project not currently included in Exhibit H, and, subject to subsection (c) below, Exhibit H to the General Contract shall then be amended to include such provisions.

Subject to subsection (c) below, the Subcontractor shall perform the Work and all other Services in compliance with the Applicable Provisions and future provisions as advised by the Owner and Construction, and assist and cooperate with the Owner, upon the Owner's request, in connection with the obligations of the Owner under the Applicable Provisions and any future agreements that pertain to the Project. Any such responses must be reviewed and approved by the Owner prior to submission to the requesting party. The Subcontractor shall not act, or omit to act, so as to cause the Owner or Construction Manager to be in noncompliance with the requirements of the Applicable Provisions or future provisions.

In the event that compliance with the terms of any such future agreements requires an increase in the scope of the Work which is neither inferable from nor implied by the Drawings and Specifications, or a material increase in Subcontractor's liability under this Agreement, the same shall be deemed to constitute a Change under this Agreement.

19. After the last paragraph in **Article XIV** (titled “Ethics and Compliance”, add the following new paragraphs titled “Leadership in Energy and Environmental Design (“LEED”)”

Subcontractor acknowledges that Owner intends for the Project to obtain U.S. Green Building Council LEED Certification pursuant to the requirements set forth in Exhibit AA to the General Contract. It shall be the responsibility of Subcontractor to assist Owner, Design Professionals, Separate Contractors and LEED consultants to achieve such certification by creating (if necessary) and furnishing all cost evaluation, program implementation and any other documentation or information needed or requested by Owner, Design Professionals, Separate Contractors or LEED consultants in order to achieve LEED Certification as per Owner’s requirements, or to comply with the terms and conditions for green building outline of responsibilities or indoor air quality requirements. Subcontractor acknowledges that representations by Subcontractor regarding its knowledge of and experience with LEED Certification constitute a material inducement to the Construction Manager and Owner in deciding to engage Subcontractor in connection with the Project.

Subcontractor shall review and provide the Construction Manager, Owner, Design Professionals and Owner’s LEED consultants with all analysis relating to the necessary materials, methodologies, and costs associated with obtaining LEED Certification.

Without limiting any other provision of this Agreement, Construction Manager shall perform any and all other services necessary to permit the completion of the Work in accordance with the LEED Certification requirements of Exhibit AA to the General Contract.

20. After the last paragraph in **Article XIV** (titled “Ethics and Compliance”, add the following new paragraphs titled “Ethical Conduct / Anti-Bribery and Corruption”

a. Subcontractor acknowledges that Owner is committed to having the Services (as defined the General Contract) performed in accordance with the highest ethical standards applicable to, or governing, the conduct of construction practice. In furtherance thereof, Subcontractor hereby agrees to comply with and observe all Applicable Laws (as defined in the General Contract), and all other professional and ethical guidelines governing performance of the Services. Accordingly, Construction Manager shall comply with the Integrity Provisions as set forth in General Contract as Exhibit FF.

b. In consideration of Construction Manager entering into this Agreement, Subcontractor hereby acknowledges, certifies, warrants and undertakes to Construction Manager and Owner that:

i. it has not offered, promised, given or agreed to give and shall not during the term of this Agreement offer, promise, give or agree to give to any person or entity any bribe on behalf of Owner or otherwise with the object of obtaining a business advantage for Owner or otherwise;

ii. it will not engage in any activity or practice which would constitute an offence under any applicable anti-bribery and/or anti-corruption laws, including but not limited to the United States Foreign Corrupt Practices Act of 1977;

iii. it has, and will maintain in place, its own policies and procedures to ensure compliance with any applicable anti-corruption laws;

iv. it will ensure that any employee who performs or has performed services for or on its behalf in connection with this Agreement complies with the terms and conditions set forth in this Article XIV;

v. it has, and will maintain in place, effective accounting procedures and internal controls necessary to record all expenditures in connection with this Agreement, which enable Subcontractor, Construction Manager, and Owner to readily identify Owner's financial and related records in connection with this Agreement;

vi. from time to time during the term of this Agreement, at the reasonable request of Owner, Subcontractor will confirm in writing that it has complied with its undertakings under this Article XIV;

vii. shall notify Owner as soon as practicable of any breach of any of the undertakings contained in this Article XIV; and

viii. it shall explicitly include the obligations in this Article XIV in any subcontracts or agreements formed between Subcontractor and any subcontractors or subconsultants to the extent that those subcontracts or agreements relate to fulfillment of Subcontractor's obligations to Construction Manager under this Agreement.

21. After the last paragraph titled "Bonds" in **Article XXIV** "Insurance" add the following new paragraph titled "Professional Liability Insurance":

Any Subcontractor responsible for performing professional design services, as may be required by the Specifications, shall be required to provide proof of professional liability insurance, covering the negligent or allegedly negligent acts, errors or omissions of such Subcontractor and its design professionals, with coverage limits of at least \$5,000,000 per claim and \$5,000,000 in the aggregate on an annual basis., except as otherwise agreed to by the Owner. Any such Subcontractor shall be required to maintain such coverage for a period of at least three (3) years from the completion of its Subcontract.

22. New **Article XXX** "Exhibits" shall state as follows:

The General Contract Exhibits H, R, S, T, U, X, AA, BB, CC, DD, EE are incorporated into this Agreement by reference as if fully set forth herein.

Exhibit J

Insurance Requirements

Construction Manager shall, at its own cost and expense, obtain and keep in full force and effect the insurance described in the schedule (titled "Insurance Amounts") attached hereto with coverage amounts that are no less than the minimum coverage amounts described therein. In addition to the terms and conditions described in the attached schedule, Construction Manager's insurance shall be subject to the following terms and conditions.

- (a) Construction Manager's insurance shall cover the activities of Construction Manager, any Subcontractor and anyone directly or indirectly employed by the Construction Manager or any Subcontractor (including anyone for whose acts any of them are liable). Such insurance shall be continuously maintained during the entire term of this Agreement, plus applicable completed operations extension period.
- (b) Construction Manager shall not commence the Work until Construction Manager has furnished copies of certificates of insurance in a form satisfactory to the Owner evidencing that Construction Manager has obtained insurance in accordance with this Exhibit. Such certificates must provide that the insurer will give Owner at least 45 calendar days' prior written notice of material change in, or cancellation of, such insurance. If a certificate expires, a renewal certificate is required before any employee is allowed on the Project Site. Delivery of any certificate of insurance to Owner shall not constitute Owner's approval or agreement that Construction Manager's insurance requirements have been met or that the insurance policies shown in the certificates of insurance are in compliance with these requirements.
- (c) Construction Manager's insurance shall be written in form and substance reasonably satisfactory to Owner by a reputable insurance company authorized to do business in the state where the work is to be performed with a A.M. Best Company rating of A-VIII or better.
- (d) Construction Manager's insurance will be primary and non-contributory with respect to Owner's insurance or self-insurance programs.
- (e) Owner makes no representation that the insurance required herein will necessarily be adequate to protect the Construction Manager. Construction Manager's insurance obligations will not reduce or limit the Construction Manager's obligation to indemnify Owner pursuant to the terms of this Agreement.
- (f) To the extent commercially available, with the exception of Construction Manager's workers' compensation insurance, Construction Manager's insurance policies will include the obligation to defend and include the Additional Insureds listed on the Cover Page (which include but may not be limited to Owner, Owner's property manager, Owner's landlords, co-tenants and subtenants, Owner's lender and their directors, officers, representatives, agents, and employees) as additional insureds on a primary and noncontributory basis for Work performed under or incidental to this Agreement. If an Additional Insured has other insurance applicable to the loss, it will be on an excess or contingent basis. Neither Construction Manager's obligation to provide insurance nor the scope of such insurance coverage shall be reduced by the existence of such other insurance.
- (g) All of Construction Manager's insurance policies required herein shall include clauses stating that each insurance policy will waive all rights of recovery, under subrogation or otherwise, against

the Additional Insureds, including Owner, Owner's property manager, Owner's lender and their directors, officers, representatives, agents, and employees and all tiers of Subcontractors or consultants engaged by them. The Construction Manager will require similar written waivers from all Subcontractors on behalf of all parties enumerated in this section.

- (h) The Construction Manager will cause each Subcontractor employed by Construction Manager to purchase and maintain insurance of the types and in the amounts specified below. When requested by the Owner, the Construction Manager will furnish copies of certificates of insurance evidencing coverage for each Subcontractor pursuant to the requirements described herein:

INSURANCE AMOUNTS

Construction Manager shall carry the following insurance policies in the following amounts and with the following terms and conditions:

Workers' Compensation

Minimum Required Limits:	<ul style="list-style-type: none"> Worker's Compensation - Statutory Limits Employer's liability: <ul style="list-style-type: none"> -\$2,000,000 Each Accident for Bodily Injury by Accident -\$2,000,000 Each Employee for Bodily Injury by Disease -\$2,000,000 Aggregate Policy Limit for Bodily Injury Disease
Required Terms and Conditions:	<ul style="list-style-type: none"> NCCI Workers Compensation and Employers Liability Insurance Policy form Waiver of Subrogation in favor of Owner and all additional insureds

Commercial General Liability: The Construction Manager will maintain Commercial General Liability insurance covering all operations by or on behalf of the Construction Manager on an occurrence basis against claims for bodily injury, property damage (including the loss of use thereof), personal injury and advertising injury. Such insurance will have the minimum limits, terms and conditions specified below, and shall be primary and non-contributory to any other valid and collectible insurance maintained by the Construction Manager, the Owner and all other Indemnitees; such limits may be provided in the form of a primary policy or combination of primary and umbrella/excess policies, each meeting the conditions specified herein for such policies.

Minimum Required Limits:	<ul style="list-style-type: none"> \$100,000,000 General Aggregate Per Project (other than products-completed operations) \$100,000,000 Products and Completed Operations Aggregate \$100,000,000 Each Occurrence for Bodily Injury/Property Damage \$100,000,000 Each Person/Organization for Personal injury and Advertising injury

Required Terms and Conditions:	<ul style="list-style-type: none"> ▪ ISO Occurrence Form, or equivalent ▪ Products and Completed Operations coverage maintained for the later of the applicable statute of repose or ten (10) years after contract completion ▪ Blanket Contractual Liability, including liability assumed under indemnity provisions of this Agreement ▪ Broad Form Property Damage ▪ Independent Contractors Coverage ▪ Separation of Insureds ▪ No exclusion for Underground, Explosion and Collapse coverage (“XCU”) ▪ Personal Injury and Advertising Injury ▪ Incidental Medical Malpractice ▪ Owner and all other Indemnitees included as Additional Insureds for both ongoing operations and completed operations ▪ Waiver of Subrogation in favor of Owner, all other Additional Insureds as set forth on the Cover Page, and all Indemnitees in agreement
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Automobile Liability: The Construction Manager will maintain Business Auto Liability covering liability arising out of any auto (including owned, non-owned and hired autos).

Minimum Required Limits:	<ul style="list-style-type: none"> ▪ \$5,000,000 Combined Single Limit Each Accident <i>(Limit may be a combination of Primary and Umbrella policies)</i>
Required Terms and Conditions:	<ul style="list-style-type: none"> ▪ ISO Business Auto Policy (Form CA 00 01 10 01) or equivalent ▪ Waiver of Subrogation in favor of Owner and all other Additional Insureds and Indemnitees in agreement

Construction Manager’s Professional Liability: The Construction Manager will maintain Professional Liability insurance, covering actual or alleged negligent acts, errors or omissions committed by the Construction Manager. The Professional Liability coverage shall be maintained during the entire term of the Project, and for the later of the applicable statute of repose or three (3) years after final completion thereof.

Minimum Required Limits:	<ul style="list-style-type: none"> ▪ \$5,000,000 per claim and in the annual aggregate
Required Terms and Conditions:	<ul style="list-style-type: none"> ▪ If coverage is provided on a claims-made basis, Retroactive Date Prior to Start of Work

Design Professional Liability: The Construction Manager will require every Subcontractor responsible for performing profession design services to maintain Professional Liability insurance, covering actual or alleged negligent acts, errors or omissions committed by such Subcontractor or its

design professionals. The Professional Liability coverage shall be maintained during the entire term of the Project, and for the later of the applicable statute of repose or three (3) years after final completion thereof.

Minimum Required Limits:	<ul style="list-style-type: none"> ▪ \$2,000,000 per claim ▪ \$5,000,000 in the annual aggregate
Required Terms and Conditions:	<ul style="list-style-type: none"> ▪ If coverage is provided on a claims-made basis, Retroactive Date Prior to Start of Work

Construction Manager's Pollution Liability: Construction Manager will maintain a policy covering third- party injury and property damage claims, including cleanup costs, as a result of pollution conditions arising from Construction Manager's operations and completed operations with no exclusion relating to physical damage caused by mold Such insurance will have these minimum limits, terms and conditions:

Minimum Required Limits:	<ul style="list-style-type: none"> ▪ \$5,000,000 Each Occurrence ▪ \$5,000,000 Policy Aggregate
Required Terms and Conditions:	<ul style="list-style-type: none"> ▪ Owner included as Additional Insured ▪ Retroactive Date Prior to Start of Work ▪ Completed Operations to continue in force for 36 Months after job completion ▪ Separation of Insured clause with no exclusion for Insured versus Insured claims

Certificate Holder and Additional Insured:

The Certificate Holder for the Project is:

Calmart Sub I, LLC

250 Vesey Street, 15th Floor

New York, New York 10281-1023

The Additional Insureds are:

(1) Jamison California Market Center, L.P., BSREP II LA Mart Special GP LLC, Brookfield Properties Management (CA) Inc., and their respective affiliates, shareholders, members (including members of members), partners (including partners of partners), subsidiaries, and related entities, and each of their respective successors and assigns; and

(2) such other and further entities consistent with the types of entities and having similar relationships with Owner as the entities listed herein and as may be identified by the Owner to the Construction Manager in writing.

Exhibit K

Cost of the Work

1. Cost of the Work

- 1.1 Cost of the Work shall include the Direct Work Cost and General Conditions Costs as set forth below under Section 2. Allowable Costs. The Fee shall be applied to the Cost of the Work only.

2. Allowable Costs

- 2.1 The Cost of the Work shall include, without duplication, the following Allowable Costs estimated by the Construction Manager for the performance of the Work, without mark-up (except as may be indicated):

2.2 Direct Work Costs

- 2.2.1 All costs paid by Construction Manager under Subcontracts approved by Owner for Work performed under this Agreement.
- 2.2.2 Costs, including transportation costs, cost of materials and equipment incorporated or to be incorporated in the Work.
- 2.2.3 Costs of materials in excess of those actually installed, but which are required to provide reasonable allowance for waste and for spoilage.
- 2.2.4 Net rental charges of all machinery and equipment (excluding hand tools) used at the Project Site in connection with the Work, together with costs incurred in the installation thereof, minor repairs and replacements thereto and the dismantling, removal, transportation and delivery of the same.
- 2.2.5 Except to the extent provided in Section 15.4 of this Agreement, Federal, State and local sales, use, excise, personal property and other similar taxes, if any, which may be required to be paid in connection with Direct Costs.
- 2.2.6 Costs of heat, light, power, water, safety protection, fire watch, and standby labor.
- 2.2.7 Costs incurred in connection with the storage and warehousing of materials purchased and received in advance of when needed for the Work, subject to prior written approval of the Owner.

2.3 General Conditions Costs

- 2.3.1 The percentage of time allocated to the Project by the Construction Manager's full-time employees ("Personnel") multiplied by the monthly rates for such personnel, each as set forth in Exhibit C (Staffing Plan/Key Personnel). A burden rate ("Burden Rate") of seventy-six percent (76%) shall be applied to the charges for such personnel. Exhibit C shall be updated by the Construction Manager as employees are assigned to the Project; provided, however that no change in the

salary schedule set forth in Exhibit C may be made by the Construction Manager without the Owner's prior written approval.

- 2.3.2 No personnel, other than those specifically identified in Exhibit C, may be calculated in the General Conditions Costs.
- 2.3.3 Said Burden Rate is to compensate Construction Manager for all employee costs beyond the base annual salaries, including but not limited to: fringes and benefits, FICA taxes, Medicare Taxes, FUTA and SUTA taxes, tuition reimbursement costs, vacation, sick leave, maternity and paternity leave, paid time off, medical savings plan contributions, car allowances, commuter allowances, drug plan costs, bonuses (excluding part of the Base Fee allocated for the bonus pool pursuant to Section 14.1.1), profit sharing, ESOPs, etc. The Burden Rate shall not be subject to audit by Owner.
- 2.3.4 The Burden Rate shall not apply to union labor.
- 2.3.5 The following General Conditions Costs shall be calculated at actual cost, subject to the limitations set forth below. No Burden Rate shall apply to such costs.
 - 2.3.5.1 Wages, including fringes and other benefits paid pursuant to applicable collective bargaining agreements, for union labor, in the direct employ of Construction Manager that is used to perform construction services incident to the Work. The CM's General Conditions Cost Study in Exhibit FF includes the cost of administration of pay checks and certain union benefits and any premium rate costs for union labor.
 - 2.3.5.2 Project field office costs and expenses incurred in connection with preparing space and installing a communications network at the Project Site as approved by Owner.
 - 2.3.5.3 Actual costs and/or rental charges for the following, when associated with Work: temporary structures; construction equipment; materials not incorporated into the Work; and hand tools not owned by workmen. Charges allowed under this Section shall include: installation, maintenance, fuel, propane, lubricants, repairs, replacements, dismantling, removal, transportation, delivery, insurance and return costs, less the reasonable salvage value obtainable on such items purchased by Construction Manager which are used, but not totally consumed, in the performance of the Work.
 - 2.3.5.4 Cost of Site cleanup, and rubbish and debris removal.
 - 2.3.5.5 Work-related costs including, but not limited to operation of loading docks, elevator and hoist operators, teamsters, operating and hoist engineers, master mechanics, maintenance mechanics, teamster foreman and similar fees and out-of-pocket expenses normally included in General Conditions Costs in accordance with good construction practice in Los Angeles, California.

- 2.3.5.6 Federal, State and local sales, use, excise, personal property and other similar taxes, if any, which may be required to be paid by Construction Manager in connection with the General Conditions Costs, except taxes applicable, directly or indirectly, to Construction Manager's Fee.
- 2.3.5.7 Costs of specialty consultants and third-party service vendors (each approved in advance by Owner); pest control, and snow removal.
- 2.3.5.8 Labor relations costs incurred solely with respect to the Work, subject to prior written approval of Owner.
- 2.3.5.9 Permit fees and expeditor fees for which Construction Manager is responsible under this Agreement.
- 2.3.5.10 Fees of third party inspection/testing services and testing laboratories for tests required to be performed by the Construction Manager as required by Owner, except those related to defective or nonconforming Work, which Construction Manager shall back-charge against the applicable Subcontractor(s).
- 2.3.5.11 Protection to property adjoining the Project Site, and protective items to stored, staged, and installed Work, and repairs thereto, including, without limitation, sidewalk bridge and fences.
- 2.3.5.12 IT surcharge included in the General Conditions Costs Study attached hereto as Exhibit FF.
- 2.3.5.13 The additional items set forth in the General Conditions Costs Study, attached hereto as Exhibit FF.

2.4 Documentation

- 2.4.1 With regard to all Allowable Costs, Construction Manager shall provide backup documentation as required by Owner in connection with establishment of the General Conditions Cost.

3. Non-Allowable Costs

- 3.1 Owner will not reimburse Construction Manager for any of the following Non-Allowable Costs, which shall be borne by Construction Manager at its sole expense and no fee shall be earned as a result, unless otherwise agreed in writing by Owner:
 - 3.1.1 Salaries or other compensation of any principals and branch office heads of Construction Manager, except those specifically listed on Exhibit FF.
 - 3.1.2 Salaries of support staff personnel (except for approved General Conditions Costs) including, but not limited to, legal, billing/collections, financial accounting and corporate insurance, except as otherwise provide in Exhibit FF.

- 3.1.3 Operating expenses of Construction Manager's home and branch offices, including overhead and administrative expenses (except as expressly provided in Section 2.3.5 above).
- 3.1.4 Any part of Construction Manager's capital expenses, including interest on capital employed in connection with the Work.
- 3.1.5 All costs arising out of or relating to the gross negligence or willful misconduct of the Construction Manager or any Subcontractor in fulfilling a specific responsibility to the Owner set forth in this Agreement. All costs arising out of or relating to the negligence of the Construction Manager or any Subcontractor in fulfilling a specific responsibility to the Owner set forth in this Agreement shall be reimbursable under Contingency provided that the Construction Manager first uses best efforts to pursue recovery from the Subcontractor (in the case of Subcontractor's negligence) and only to the extent that the cost is not recoverable from the Subcontractor or insurance proceeds.
- 3.1.6 Costs of the Work which have been backcharged against or deducted from the compensation of a Subcontractor for any reason, or which are otherwise recovered from that Subcontractor. If the Construction Manager decides for any reason not to pursue a claim against a Subcontractor such claim shall, at the Owner's request, be assigned to the Owner.
- 3.1.7 Costs incurred by reason of Construction Manager's failure to comply with Applicable Laws (subject to use of the Contingency).
- 3.1.8 Costs of any item or expense which this Agreement expressly provides is to be paid or borne solely by Construction Manager.
- 3.1.9 Overtime charges, except those included in Subcontractor prices for specified Work areas, or otherwise approved by the Owner in writing.
- 3.1.10 Costs associated with the correction of defective or non-conforming Work resulting from the gross negligence or willful misconduct of the Construction Manager or any Subcontractor. All costs associated with the correction of defective or non-conforming Work resulting from the negligence of the Construction Manager or any Subcontractor shall be reimbursable under Contingency provided that the Construction Manager first uses best efforts to pursue recovery from the Subcontractor (in the case of Subcontractor's negligence) and only to the extent that the cost is not recoverable from the Subcontractor or insurance proceeds.
- 3.1.11 Check processing fees or similar charges.
- 3.1.12 Except for the initial set up of field office as provided for in Section 2.3.5.2 above and otherwise provided in Exhibit FF, the costs for technical support utilized for computer hardware and software; Project Website development and maintenance; record retention; bank fees; EDP for accounting, and EDP for Construction Manager's Project Management Control Systems ("PMCS"); and e-mail infrastructure costs for the Project field staff.

- 3.1.13 All expenses incurred by Construction Manager's employees in connection with the Project which are reimbursable to such employees under Construction Manager's Business Expenses Policy, and incurred in the discharge of duties connected to the Services or the Work. Such Business Expenses Policy shall be provided to Owner and utilized in the establishment of the General Conditions Costs.
- 3.1.14 Any other expenses not expressly provided for as a Allowable Cost in this Exhibit K shall be deemed a Non-Allowable Cost.
- 3.1.15 Costs of Construction Manager's insurance as required in Section 12.1 of this Agreement and allocated to the Work including, without limitation, advance deposit premiums therefor when billed for the Work. This shall not preclude reimbursement to the Construction Manager for the costs of insurance as provided for in Section 12.1.4 of this Agreement (however, such reimbursement shall not be considered a Cost of the Work).
- 3.1.16 Costs of Construction Manager's Subcontractor Default Insurance and payment and performance bonds, as required in Section 11.5 of this Agreement. This shall not preclude reimbursement to the Construction Manager for the costs of Subcontractor Default Insurance or bonds as provided for in Section 14.5.1 of this Agreement (however, such reimbursement shall not be considered a Cost of the Work).

Exhibit L

PGMP



CMC pGMP Budget Summary_UniFormat

EXHIBIT L

Direct Work		Estimate Update - 06.05.2018
A10	Foundations	\$ -
A20	Subgrade Enclosures	\$ 178,000
A40	Slab On Grade	\$ -
A90	Substructure Related Activities	\$ -
B10	Superstructure	\$ 11,638,000
B20	Vertical Exterior Enclosure	\$ 23,085,000
B30	Horizontal Exterior Enclosure	\$ 7,004,000
C10	Interior Construction	\$ 6,919,000
C20	Interior Finishes	\$ 8,157,000
D10	Vertical Transportation	\$ 18,178,000
D20	Plumbing	\$ 6,069,000
D30	HVAC	\$ 19,922,000
D40	Fire Protection	\$ 6,468,000
D50	Electrical	\$ 21,030,000
D60	Communications	\$ 2,906,000
D70	Electronic Safety & Security	\$ 4,992,000
E10	Equipment	\$ 525,000
E20	Furnishings	\$ -
F10	Special Construction	\$ -
F20	Selective Demolition	\$ -
F30	Building Demolition	\$ 5,559,000
G10	Site Preparation	\$ 371,000
G20	Site Improvements	\$ 4,638,000
G30	Wet Utilities	\$ 107,209
G40	Site Electrical	\$ 250,000
Z10	General Requirements	\$ 3,675,000
		\$ -
(a) Subtotal Direct Work		\$ 151,671,000
Indirect Work		
0.00%	Design Contingency (BY OWNER)	\$ -
3.00%	Construction Contingency	\$ 4,550,000
Subtotal Contingencies		\$ 4,550,000
3.46%	General Conditions	\$ 7,322,000
1.15%	Subguard	\$ 1,744,000
3.10%	Fee	\$ 4,929,000
1.17%	General Liability Insurance	\$ 1,860,000
0.10%	Gross Receipt Tax	\$ 169,000
Subtotal Insurances, Fee & GCs		\$ 16,024,000
Total Cost of Construction		\$ 172,245,000

CMC pGMP Budget Detail Estimate_UniFormat

Estimate Update - 06.05.2018

#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
2	Bldg. A		Building A				\$ 58,490,152
3	Bldg. A		B - Shell				\$ 18,126,921
4	Bldg. A		B10 - Superstructure				\$ 3,262,498
5	Bldg. A		B1010 - Floor Construction				\$ 2,483,507
6	Bldg. A		Balcony Floor Construction				\$394,867
7	Bldg. A	03 20 00	Normal Weight Deck - 7.5 LBS/SF (Includes Drill & Epoxy)	8,790.00	LBS	4.86	\$42,719
8	Bldg. A	03 30 00	CIP Concrete - Assume 10% Waste	36	CY	405	\$14,580
9	Bldg. A	03 30 00	CIP Concrete - Finish Top of Deck	1,758.00	SF	3.24	\$5,696
10	Bldg. A	03 30 00	CIP Concrete - Infill at A&B Bridge	6	EA	40,936.91	\$245,621
11	Bldg. A	03 30 00	CIP Concrete - Place	36	CY	108	\$3,888
12	Bldg. A	03 30 00	Metal Decking (Previously Priced as Formwork)	1,758.00	SF	32.4	\$56,959
13	Bldg. A	03 30 00	Reshores				
14	Bldg. A	05 10 00	Structural Metal Framing Allowance	6	EA	4,233.82	\$25,403
15							
16	Bldg. A		CIP Concrete - 8" Walls for (6) New Passenger Elevator Pit (Assembly)				\$ 107,702
17	Bldg. A	03 20 00	Reinforcement - 20 LBS/SF (Includes Drill & Epoxy)	1,198.00	SF	64.53	\$77,307
18	Bldg. A	03 30 00	CIP Concrete - Assume 10% Waste	17.65	CY	405	\$7,148
19	Bldg. A	03 30 00	CIP Concrete - Finish	520.00	SF	3.24	\$1,685
20	Bldg. A	03 30 00	CIP Concrete - Place	17.65	CY	108	\$1,906
21	Bldg. A	03 30 00	Metal Decking (Previously Priced as Formwork)	520.00	SF	37.8	\$19,656
22	Bldg. A	03 30 00	CMU Wall	1,198.00	SF	45	incl abv.
23							
24	Bldg. A		CIP Concrete - Infill at Deleted Trash Chute				\$36,883
25	Bldg. A	03 20 00	Trash Chute Infills (includes concrete, metal deck & framing)	874.00	SF	\$0.00	\$0
26	Bldg. A	03 20 00	Normal Weight Deck - 7.5 LBS/SF (Includes Drill & Epoxy)	874.00	SF	\$42.20	\$36,883
27	Bldg. A	03 30 00	CIP Concrete - Assume 10% Waste				
28	Bldg. A	03 30 00	CIP Concrete - Finish Top of Deck				
29	Bldg. A	03 30 00	CIP Concrete - Place				
30	Bldg. A	03 30 00	Formwork				
31	Bldg. A	03 30 00	Reshores				
32	Bldg. A	05 10 00	Structural Metal Framing				
33							
34	Bldg. A		Misc. Structural Items				\$921,629
35	Bldg. A	03 30 00	CIP Concrete - Mechanical Pads - New AHUs	9,360.00	SF	43.2	\$404,352
36	Bldg. A	03 30 00	CIP Concrete - Mechanical Pads - Replacement Boilers	475	SF	43.2	\$20,520
37	Bldg. A	03 30 00	Concrete Curbs / Stem Walls at New Exterior Storefront	257	LF	135	\$34,695
38	Bldg. A	03 30 00	Repair Spalled Concrete	1	AL	37,800.00	\$37,800
39	Bldg. A	05 10 00	New Steel Pedestals for Replacement Cooling Towers (6 EA)	12	EA	8,467.64	\$101,612

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1			--- Base Estimate ---				\$ 151,670,428
40	Bldg. A	05 10 00	Structural Allowance for Strengthening Deck for New Rooftop Equipment	1,022.00	LF	315.70	\$322,650
41							
42	Bldg. A		Structural Metal Framing for (6) New Passenger Elevator Openings				\$880,676
43	Bldg. A	05 21 23	Fireproofing	86	TN	1,772.78	\$152,459
44	Bldg. A	05 21 23	Structural Metal Framing	86	TN	8,467.64	\$728,217
45							
46	Bldg. A		Structural Metal Framing for Extended Stair Openings				\$0
47	Bldg. A	05 20 00	Structural Metal Framing				
48	Bldg. A	05 21 23	Fireproofing				
49							
50	Bldg. A		Structural Metal Framing for New Passenger Elevator Roof Penthouse				\$141,750
51	Bldg. A	05 10 00	Fireproofing	13	TN	1,772.78	\$23,046
52	Bldg. A	05 10 00	Metal Decking	1,058.00	SF	6.35	\$6,719
53	Bldg. A	05 10 00	Structural Metal Framing	13.23	TN	8,467.64	\$111,985
54							
55	Bldg. A		B1020 - Roof Construction				\$ 238,991
56	Bldg. A		Elevator Guiderail Support Steel				\$238,991
57	Bldg. A	05 10 00	Elevator Guide rail Support Steel & Hoist Beam	28.22	TN	8,467.64	\$238,991
58							
59	Bldg. A		B1080 - Stairs				\$ -
60	Bldg. A		Stair Construction (Assembly)				\$0
61	Bldg. A	05 51 00	Paint - Extended Stairs from from L11 to 13				
62	Bldg. A	05 51 00	Paint - Extended Stairs from Stairs from L6 to 13				
63							
64	Bldg. A		B1090 - Fire Safing				\$ 540,000
65	Bldg. A		Metal Stud Framing				\$540,000
66	Bldg. A	07 20 00	Fire safing at building perimeter	30,000.00	LF	18	\$540,000
67							
68	Bldg. A		B20 - Exterior Enclosure				\$ 11,668,479
69	Bldg. A		B2010 - Exterior Walls				\$ 10,896,997
70	Bldg. A		Exterior Wall Construction (Assembly)				\$ 987,851
71	Bldg. A	04 20 00	Precast Stone - Cleaning Pressure Wash	102,427.00	SF	2.05	\$209,975
72	Bldg. A	04 20 00	Precast Stone - Mock Up Allowance	1	AL	10,000.00	\$10,000
73	Bldg. A	04 20 00	Precast Stone - Protective Sealer	102,427.00	SF	1	\$102,427
74	Bldg. A	04 20 00	Precast Stone - Sealant Replacement	8,890.00	LF	\$ 16	\$ 138,276
75	Bldg. A	04 20 00	Precast Stone - Spall and Crack Repair Allowance	102,427.00	SF	2.3	\$235,582
76	Bldg. A	05 10 00	Structural Metal Stud Framing - Loading Dock Corridor & New Ramps	6,198.00	SF	17.78	\$110,213
77	Bldg. A	08 44 00	Restoration Work Swingstage Access	1	LS	45,000.00	\$45,000
78	Bldg. A	08 44 00	Restore Aluminum Mullions at Existing Curtainwall	1	LS	58,417.50	\$58,418
79	Bldg. A	08 44 00	Water Test Curtainwall System - 1 Bay	1	LS	20,000.00	\$20,000
80	Bldg. A	08 44 00	Wetglaze Existing Curtain Wall - Facing C Building - Remove Gasket & Silicon	2,772.00	LF	10	\$27,720

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1			--- Base Estimate ---				\$ 151,670,428
81	Bldg. A	08 44 00	Wetglaze Existing Curtain Wall - Interior Street - Remove Gasket & Silicon	3,024.00	LF	10	\$30,240
82							
83	Bldg. A		Fabricated Exterior Wall Assemblies (Assembly)				\$ 8,917,289
84	Bldg. A	08 44 00	Exterior Sealants at New Curtain Wall Off Swing stage	1	LS	40,000.00	\$40,000
85	Bldg. A	08 44 00	New Panelized Window Wall Adjacent to Deleted Skylight at North Side of 3rd Floor - EWS 3	426	SF	128.42	\$54,707
86	Bldg. A	08 44 00	Replace Existing Curtain Wall - Panelized Window Wall System - EWS1 & EWS 8	68,701.00	SF	128.42	\$8,822,582
87	Bldg. A	08 44 00	Restoration Work Swingstage Access				
88	Bldg. A	08 44 00	Restore Aluminum Mullions at Existing Curtainwall				
89	Bldg. A	08 44 00	Water Test Curtainwall System - 1 Bay				
90	Bldg. A	08 44 00	Wetglaze Existing Curtain Wall - Facing C Building - Remove Gasket & Silicon				
91	Bldg. A	08 44 00	Wetglaze Existing Curtain Wall - Interior Street - Remove Gasket & Silicon				
92							
93	Bldg. A		Metal Stud Framing				\$ 991,857
94	Bldg. A	09 20 00	Interior Street - Framing w/drywall at Interior and Densdeck and Ice & Water at Exterior	1,040.00	SF	96.15	\$100,000
95	Bldg. A	09 20 00	Patching of existing - Allowance	1	SF	50,000.00	\$50,000
96	Bldg. A	09 20 00	Plaster Ceilings	11,818.00	SF	36.27	\$428,639
97	Bldg. A	09 20 00	Plaster Trim	20.16	SF	105.21	\$2,121
98	Bldg. A	09 20 00	Plaster Wall 18'	8,711.84	SF	34.05	\$296,638
99	Bldg. A	09 90 00	Exterior walls & Ceilings - Paint	19,379.16	SF	3	\$58,137
100	Bldg. A	09 20 00	Temporary Weather Walls at Retail Storefront - Interior Street	4197	SF	7	\$29,379
101	Bldg. A	09 20 00	Temporary Weather Walls at Retail Storefront - Main Street	1766	SF	7	\$12,362
102	Bldg. A	09 20 00	Temporary Weather Walls at Retail Storefront - 9th Street	2083	SF	7	\$14,581
103							
104	Bldg. A		B2020 - Exterior Windows				\$ 197,419
105	Bldg. A		Exterior Window Wall (Assembly)				\$ 197,419
106	Bldg. A	08 43 00	Storefront - Lobby Entrance - SF 01	379	SF	250	\$94,750
107	Bldg. A	08 43 00	Storefront - Retail Sheet Metal Bulkheads (Storefront Glass & Entrance Doors by Tenant)	1,040.00	SF	98.72	\$102,669
108							
109	Bldg. A		B2050 - Exterior Doors and Grilles				\$ 105,000
110	Bldg. A		Exterior Entrance Doors (Assembly)				\$ 105,000
111	Bldg. A	08 42 26	All-Glass Entrances - Bridge	6	EA	15,000.00	\$90,000
112	Bldg. A	08 42 26	All-Glass Entrances - Retail	1	EA	15,000.00	\$15,000
113							
114	Bldg. A		B2080 - Exterior Wall Appurtenances				\$ 469,063
115	Bldg. A		Exterior Bridge Walls and Railings (Assembly)				\$ 469,063
116	Bldg. A	05 41 00	Bridge Soffit - Structural Metal Stud Framing - A-B Bridge Soffits	12,520.69	SF	21.17	\$265,063

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1			--- Base Estimate ---				\$ 151,670,428
117	Bldg. A	06 81 00	Guardrail Glass at A-B Bridge	480	LF	425	\$204,000
119	Bldg. A		B30 - Roofing				\$ 3,195,944
120	Bldg. A		B3010 - Roofing				\$ 2,052,544
121	Bldg. A		Canopy Roofing (Assembly)				\$ 108,000
122	Bldg. A	03 30 00	Finish Concrete Topping - A-B Bridge	5,000.00	SF	\$ 22	\$ 108,000
124	Bldg. A		Flashing & Accessories				\$1,944,544
125	Bldg. A	07 55 00	Membrane Roofing - Main Roof	54,860.00	SF	24	\$1,316,640
126	Bldg. A	07 55 00	Membrane Roofing - New Elevator Machine Room Penthouse	1,058.00	SF	24	\$25,392
127	Bldg. A	07 55 00	Membrane Roofing - Penthouse Areas	24,688.00	SF	24	\$592,512
128	Bldg. A	07 55 00	New Flashing Around Removed Skylight		1	LS	\$10,000
130	Bldg. A		B3020 - Roof Appurtenances				\$ 20,000
131	Bldg. A		Flashing & Accessories				\$20,000
132	Bldg. A	05 51 33	Roof Ladders	1	LS	20,000.00	\$20,000
134	Bldg. A		B3040 - Traffic Bearing Horizontal Enclosures				\$ 34,000
135	Bldg. A		Flashing & Accessories				\$34,000
136	Bldg. A	07 10 00	Horizontal Waterproofing Membrane - A-B Bridge	4,857	SF	7.00	\$34,000
138	Bldg. A		B3080 - Exterior Enclosures				\$ 1,089,400
139	Bldg. A		Exterior Bulkheads (Assembly)				\$314,400
140	Bldg. A	09 90 00	Painting and Coating - Intumescent Paint at Exposure Structural Columns	786	LF	400.00	\$314,400
142	Bldg. A		Metal Stud Framing			\$ 775,000	\$ 775,000
143	Bldg. A	09 20 00	Gypsum Board - Backing				
144	Bldg. A	09 20 00	Gypsum Board - NR 18'				
145	Bldg. A	09 20 00	Gypsum Board - NR Wall 12'				
146	Bldg. A	09 20 00	Gypsum Board Ceilings				
147	Bldg. A	09 20 00	New Ground level Storefronts - Framing and Plaster	1	LS	\$ 175,000	\$ 175,000
148	Bldg. A	09 20 00	RFI 54 Furring at Interior of Precast Exterior	1	LS	\$ 600,000	\$ 600,000
150	Bldg. A		C - Interiors				\$ 6,506,694
151	Bldg. A		C10 - Interior Construction				\$ 2,869,794
152	Bldg. A		C1010 - Partitions				\$ 2,347,144
153	Bldg. A		Metal Stud Framing				\$ 2,347,144
154	Bldg. A	09 20 00	Gypsum Board - 1HR Wall 18'	1,986.31	SF	\$ 13	\$ 25,405
155	Bldg. A	09 20 00	Gypsum Board - 1HR Wall 12'	20,916.40	SF	\$ 14	\$ 294,294
156	Bldg. A	09 20 00	Gypsum Board - 2HR Shaft 12'	31,952.04	SF	\$ 18	\$ 588,876
157	Bldg. A	09 20 00	Gypsum Board - 2HR Shaft 18'	3,644.00	SF	\$ 16	\$ 57,466
158	Bldg. A	09 20 00	Gypsum Board - 2HR Wall 12'	21,343.24	SF	\$ 18	\$ 373,720
159	Bldg. A	09 20 00	Gypsum Board - 2HR Wall 18'	793.8	SF	\$ 17	\$ 13,471
160	Bldg. A	09 20 00	Gypsum Board - Corner Beads/ Finished Ends	1.26	SF	\$ 7,795	\$ 9,822
161	Bldg. A	09 20 00	Gypsum Board - Framing for Storefront 8'	735.03	SF	\$ 17	\$ 12,202
162	Bldg. A	09 20 00	Gypsum Board - Furring 12'	16,550.05	SF	\$ 9	\$ 156,729
163	Bldg. A	09 20 00	Gypsum Board - Furring 18'	3,780.08	SF	\$ 9	\$ 32,395
164	Bldg. A	09 20 00	Gypsum Board - HMF	160.02	SF	\$ 475	\$ 76,010
165	Bldg. A	09 20 00	New Ground level Storefronts - Framing and Plaster				

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1			--- Base Estimate ---				\$ 151,670,428
166	Bldg. A	09 20 00	RFI 54 Furring at Interior of Precast Exterior				
167	Bldg. A	09 20 00	Gypsum Board - Backing	35,911.61	SF	\$ 2	\$ 70,387
168	Bldg. A	09 20 00	Gypsum Board - NR 18'	3,787.56	SF	\$ 11	\$ 40,565
169	Bldg. A	09 20 00	Gypsum Board - NR Wall 12'	28,354.38	SF	\$ 11	\$ 310,764
170	Bldg. A	09 20 00	Gypsum Board Ceilings	16,711.64	SF	\$ 12	\$ 200,038
171	Bldg. A	09 20 00	Misc. Patch of Existing Walls	1.00	LS	\$ 35,000	\$ 35,000
172	Bldg. A	09 20 00	Public Safety DAS Enclosure Allowance	1.00	LS	\$ 50,000	\$ 50,000
173							
174	Bldg. A		C1030 - Interior Doors				\$ 522,650
175	Bldg. A		Interior Doors				\$ 522,650
176	Bldg. A	7 11 00	Existing Door Repair - Allowance	221	EA	\$ 500	\$ 110,500
177	Bldg. A	08 11 00	Door - Double - fire rated w/exit devices	37	EA	5,800.00	\$214,600
178	Bldg. A	08 11 00	Single Fire rated doors w/exit devices	23	EA	3,000.00	\$69,000
179	Bldg. A	08 11 00	Single NR Doors w/hardware	58	EA	2,100.00	\$121,800
180	Bldg. A	08 36 00	Exterior Doors assuming HM	3	EA	2,250.00	\$6,750
181							
182	Bldg. A		C20 - Interior Finishes				\$ 3,636,900
183	Bldg. A		C2010 - Wall Finishes				\$ 3,326,250
184	Bldg. A		Tile Wall Finish (Assembly)				\$ 2,941,250
185	Bldg. A	09 30 00	Elevator Lobby Finishes (Allowance)	3,850.00	SF	\$ 65	\$ 250,250
186	Bldg. A	09 30 00	Lobby Finishes (Allowance)	2,760.00	SF	\$ 350	\$ 966,000
187	Bldg. A	09 30 00	Restroom Finishes (Allowances)	12,200.00	SF	\$ 125	\$ 1,525,000
188	Bldg. A	09 20 00	Ceiling Enhancement at Interior Street (Allowance)	1.00	LS	\$ 200,000	\$ 200,000
189							
190	Bldg. A		Wall Painting and Coating (Assembly)				\$ 385,000
191	Bldg. A	09 75 00	Interior Paint - Walls & ceilings	120,000.00	SF	3	\$360,000
192	Bldg. A	09 75 00	Misc. paint & Patch	1	LS	15,000.00	\$15,000
193	Bldg. A	09 75 00	New storefront bulkheads	1	LS	10,000.00	\$10,000
194	Bldg. A	09 75 00	Paint framing at new precast - (interior side of precast)				
195							
196	Bldg. A		C2020 - Interior Fabrications				\$ 193,000
197	Bldg. A		Interior Fabrication (Assembly)				\$0
198	Bldg. A	04 40 00	Stone Countertop - Lobby Reception Desk	1	AL		incl in Finish Allo
199	Bldg. A	06 44 00	Ornamental Woodwork - Lobby Reception Desk	1	AL	\$ 24,000	incl in Finish Allo
200	Bldg. A		Signage (Assembly)				\$193,000
201	Bldg. A	10 15 00	Code Signage Allowance	1	AL	\$ 193,000	\$193,000
202							
203	Bldg. A		C2030 - Flooring				\$ 117,650
204	Bldg. A		Specialty Flooring (Assembly)				\$ 117,650
205	Bldg. A	09 35 00	Water-Resistant Flooring - Mechanical Rooms	22,472.00	SF	5	\$112,360
206	Bldg. A	09 62 35	Acid-Resistant Flooring - Machine Rooms	1,058.00	SF	5	\$5,290
207							
208	Bldg. A		Tile Flooring (Assembly)				
209	Bldg. A	09 30 00	Tile Flooring in Parking Elevator Cabs				
210	Bldg. A	09 30 00	Tile Flooring in Passenger Elevator Cabs				
211							
212	Bldg. A		D - Services				\$ 29,489,446
213	Bldg. A		D10 - Conveying				\$ 6,179,112
214	Bldg. A		D1010 - Vertical Conveying Systems				\$ 6,179,112
215	Bldg. A		Elevators (Assembly)				\$ 6,179,112

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1			--- Base Estimate ---				\$ 151,670,428
216	Bldg. A	14 20 00	Parking Garage Elevators A5, A6 - Modernize Geared Traction w/ 2500 lb capacity 350 fpm	2	EA	254,149.00	\$508,298
217	Bldg. A	14 20 00	Passenger Elevators - A9 Thru A14 - New High-Rise Gearless Traction w/ 4000 lb capacity and 700 fpm	6	EA	582,077.00	\$3,492,462
218	Bldg. A	14 20 00	Passenger Elevators - Modernize Low-Rise A1, A2, A3, A4 - Gearless Traction w/ 3000 lb capacity 500 fpm	4	EA	350,197.00	\$1,400,788
219	Bldg. A	14 20 00	Service Elevator A7 - Large - Modernize Geared Traction w/ 4500 lb capacity 250 fpm	1	LS	434,962.00	\$434,962
220	Bldg. A	14 20 00	Service Elevator A8 - Small - Modernize Geared Traction w/ 3000 lb capacity 250 fpm	1	LS	328,202.00	\$328,202
221	Bldg. A	09 30 00	Tile Flooring in Parking Elevator Cabs	80	SF	30	\$2,400
222	Bldg. A	09 30 00	Tile Flooring in Passenger Elevator Cabs	400	SF	30	\$12,000
223							
224	Bldg. A		D20 - Plumbing				\$ 2,353,252
225	Bldg. A		D2010 - Domestic Water Distribution				\$ 1,537,058
226	Bldg. A		Domestic Water Equipment (Assembly)				\$ 207,688
227	Bldg. A	22 00 00	DW Storage Tank Fill pump and controls panel	4	EA	31,195.23	\$124,781
228	Bldg. A	22 00 00	EWB - 50gal Electric	1	EA	7,278.89	\$7,279
229	Bldg. A	22 00 00	Gas Water Heater - Hi Delta	2	EA	23,176.23	\$46,352
230	Bldg. A	22 00 00	Water Treatment - rework/modify existing	1	AL	\$ 16,637	\$ 16,637
231	Bldg. A	22 00 00	Recirc Pump for new EWB system				
232	Bldg. A	22 00 00	Sewage Ejector	1	EA	12,638.64	\$12,639
233	Bldg. A		Domestic Water Piping (Assembly)				\$497,618
234	Bldg. A	22 00 00	2" DW: Piping into Tenant space: Stub-cap	3,900.00	LF	32.44	\$126,528
235	Bldg. A	22 00 00	Domestic Water Distribution - CU=vert; PEX=horiz	731,480.00	SF	0.32	\$231,229
236	Bldg. A	22 00 00	Fill pump - Piping manifold and connect to Existing	4	EA	1,788.53	\$7,154
237	Bldg. A	22 00 00	MECH Condensate drain: AHU	5	EA	844.35	\$4,222
238	Bldg. A	22 00 00	MECH Condensate drain: Fan Coil	91	EA	436.73	\$39,742
239	Bldg. A	22 00 00	MECH: Make Up Water - Cooling Tower	1	EA	3,743.43	\$3,743
240	Bldg. A	22 00 00	Replace DW Risers	1	LS	\$85,000	\$85,000
241	Bldg. A		Plumbing Fixtures (Assembly)				\$831,752
242	Bldg. A	22 00 00	COURTYARD: New Area Drain				
243	Bldg. A	22 00 00	COURTYARD: New Planter Drain				
244	Bldg. A	22 00 00	COURTYARD: Replace existing Area Drain Hardware				
245	Bldg. A	22 00 00	Fixture: Drain Rough-in to existing	89	EA	511.6	\$45,533
246	Bldg. A	22 00 00	Fixture: Rough-in to existing Wet-Stacks (Including all Horizontal	310	EA	781.13	\$242,150
247	Bldg. A	22 00 00	Floor Drains	54	EA	405.54	\$21,899
248	Bldg. A	22 00 00	Hub Drain - Assumed for reworked FP	1	EA	956.65	\$957
249	Bldg. A	22 00 00	Lavatory	90	EA	1,561.84	\$140,566
250	Bldg. A	22 00 00	Roof Receptor	1	EA	539.05	\$539
251	Bldg. A	22 00 00	Shower - M.V. assembly system	2	EA	1,663.75	\$3,327
252	Bldg. A	22 00 00	Shower: (Assuming for bike rack public RR)_shown in arch drwgs not plumbing	2	EA	1,039.84	\$2,080
253	Bldg. A	22 00 00	Urinal	42	EA	1,426.66	\$59,920
254	Bldg. A	22 00 00	Water Closet	176	EA	1,788.53	\$314,781
255							
256	Bldg. A		D2020 - Sanitary Drainage				\$662,381
257	Bldg. A		Sanitary Drainage Supplementary Components (Assembly)				\$24,166

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1			--- Base Estimate ---				\$ 151,670,428
258	Bldg. A	22 00 00	Grease Interceptor - 2,000gal (System & Core piping)	1	AL	24,165.91	\$24,166
259	Bldg. A	22 00 00	Water Treatment - Rework / modify Existing				
260	Bldg. A		Sanitary Sewer Piping (Assembly)				\$638,215
261	Bldg. A	22 00 00	4" SS, 2" Vent: Piping into Tenant space: Stub-cap	3,900.00	LF	85.24	\$332,436
262	Bldg. A	22 00 00	Replace SS Risers	1	LS	\$85,000	\$85,000
263	Bldg. A	22 00 00	Sanitary Drainage (Misc rework existing at new connections)	623,670.00	SF	0.354	\$220,779
264	Bldg. A	22 00 00	Sanitary Drainage (Misc rework existing at new connections)	32.00	Fxts	2028	incl. abv
265							
266	Bldg. A		D2030 - Building Support Plumbing Systems				\$ 92,322
267	Bldg. A		Stormwater Drainage Piping (Assembly)				\$ 92,322
268	Bldg. A	22 00 00	Storm Water rework (Misc rework existing)	731,480.00	SF	0.08	\$60,850
269	Bldg. A	22 80 00	Meters, wet valve install and low voltage wiring for shown equipment and systems	1	LS	20,796.82	\$20,797
270	Bldg. A	22 00 00	Insulation: Condensate drain 3/4	3939	LF	2.71	\$10,675
271							
272	Bldg. A		D2060 - Process Support Plumbing Systems				\$ 61,491
273	Bldg. A		Gas Systems (Assembly)				\$ 61,491
274	Bldg. A	22 00 00	MECH: Gas: HHW Boiler	4	EA	3,202.71	\$12,811
275	Bldg. A	22 00 00	Natural Gas - system rework (LP) - ALLOWANCE	731,480.00	SF	0.07	\$48,680
276							
277	Bldg. A		D30 - HVAC				\$ 7,126,051
278	Bldg. A		D3030 - Cooling Systems				\$ 7,126,051
279	Bldg. A		Central Cooling (Assembly)				\$ 3,282,308
280	Bldg. A	23 00 00	Cooling Tower - 3 Cell	2125	TN	171.03	\$363,439
281	Bldg. A	23 00 00	Heat Exchanger (HX)	5,100.00	GPM	67	\$341,700
282	Bldg. A	23 00 00	Tower pump (open) - CTP	6800	GPM	13.92	\$94,656
283	Bldg. A	23 00 00	Tower pump (closed) - CWP	7,650.00	GPM	16.25	\$124,313
284	Bldg. A	23 00 00	HHW pump (closed) - HWP	400	GPM	16.25	\$6,500
285	Bldg. A	23 00 00	VRF - Condenser (WC)	26.00	ALLOW	11828	\$307,528
286	Bldg. A	23 00 00	VRF - Fan Coil	39	EA	2575	\$100,425
287	Bldg. A	23 00 00	VRF - Fan Coil	52	ALLOW	2575	\$133,900
288	Bldg. A	23 00 00	Water Treatment	1.00	ALLOW	41256	\$41,256
289	Bldg. A	23 00 00	AHU (DOAS)	200000	CFM	5	\$1,000,000
290	Bldg. A	23 00 00	Gravity Ventilator (GV)	3	ALLOW	5128	\$15,384
291	Bldg. A	23 00 00	Packaged AC (RTU)	4,000.00	CFM	11.75	\$47,000
292	Bldg. A	23 00 00	HHW Boiler - Condensing	8000	MBH	37.6300025	\$301,040
293	Bldg. A	23 00 00	Exhaust Fan (RT)	201,701.00	CFM	1.01	\$203,718
294	Bldg. A	23 00 00	Stairwell Pressurization Fan (SF)				

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
295	Bldg. A	23 00 00	VFD: Pump	11.00	EA	7500	\$82,500
296	Bldg. A	23 00 00	TENANT: Dual-Level Rack for future WC CU (Narrative)	130	EA	915	\$118,950
297	Bldg. A		Cooling System Supplementary Components (Assembly)				\$ 310,879
298	Bldg. A	23 00 00	Test and Balance	731480	SF	0.25	\$182,870
299	Bldg. A	23 00 00	Temporary ventilation	731,480.00	LS	0.125	\$91,435
300	Bldg. A	23 00 00	Safe-off	731,480.00	SF	0.05	\$36,574
301	Bldg. A		DDC Controls from Div 25 00 00				\$ 965,554
302	Bldg. A	23 00 00	DDC Controls - New Core and Main only. Infrastructure only for all TI	731,480.00	SF	1	\$731,480
303	Bldg. A	23 00 00	Submetering:	731,480.00	ALLOW	0.07	\$51,204
304	Bldg. A	23 00 00	Smoke Control: DDC Related (See ELEC)	731,480.00	ALLOW	0.25	\$182,870
305	Bldg. A		Facility Hydronic Distribution (Assembly)				\$ 1,088,607
306	Bldg. A	23 00 00	VRF: Branch Selector - 6-port (min)	26.00	Ea	1475	\$38,350
307	Bldg. A	23 00 00	10" Piping	672.00	LF	127.6	\$85,747
308	Bldg. A	23 00 00	4" Piping	8,510.00	LF	64.4	\$548,044
309	Bldg. A	23 00 00	Branch Piping: water	731,480.00	ALLOW	0.35	\$256,018
310	Bldg. A	23 00 00	Refrigerant piping: VRF	731,480.00	ALLOW	0.1	\$73,148
311	Bldg. A	23 00 00	Gauges, valves and SOV's	4.00	ALLOW	15000	\$60,000
312	Bldg. A	23 00 00	TENANT: Branch Stub-in MECH ROOM)	1,300.00	ALLOW	21	\$27,300
313	Bldg. A		Supply Air (Assembly)				\$ 1,478,703
314	Bldg. A	23 00 00	Ductwork: 60x50	52,205.18	Lbs.	9.75	\$509,000
315	Bldg. A	23 00 00	Ductwork: 48x20	6,805.07	Lbs.	9.75	\$66,349
316	Bldg. A	23 00 00	Ductwork: 48x18	2,923.49	Lbs.	9.75	\$28,504
317	Bldg. A	23 00 00	Ductwork: 34x34	5,992.29	Lbs.	9.75	\$58,425
318	Bldg. A	23 00 00	Ductwork: 22x16	1,496.20	Lbs.	9.75	\$14,588
319	Bldg. A	23 00 00	Ductwork: 38x70	506.23	Lbs.	9.75	\$4,936
320	Bldg. A	23 00 00	Ductwork: 38x10	9,702.78	Lbs.	9.75	\$94,602
321	Bldg. A	23 00 00	Ductwork: Branch completion for TBD (Round, Rect, Flex)	731,480.00	ALLOW	0.3	\$219,444
322	Bldg. A	23 00 00	TENANT: Ductwork Stub-in	1,300.00	ALLOW	62	\$80,600
323	Bldg. A	23 00 00	Sound Traps	5.00	ALLOW	4800	\$24,000
324	Bldg. A	23 00 00	Inline Duct Silencers - <8000cfm on EF only	5.00	EA	1500	\$7,500
325	Bldg. A	23 00 00	Insulation: Wet	9,182.00	ALLOW	13	\$119,366
326	Bldg. A	23 00 00	Dampers (all)	731,480.00	ALLOW	0.18	\$131,666
327	Bldg. A	23 00 00	Grilles, Registers and Diffusers	731,480.00	ALLOW	0.15	\$109,722
328	Bldg. A	23 00 00	Interior Louvers	1.00	ALLOW	10000	\$10,000
	Bldg. A		D3050 - Facility HVAC Distribution Systems				
	Bldg. A		Facility Hydronic Distribution (Assembly)				
	Bldg. A	23 00 00	Option 3 - Rework existing CHW and HHW piping; new insulation				
	Bldg. A		D3060 - Ventilation				
	Bldg. A		Exhaust Air (Assembly)				

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1			--- Base Estimate ---				\$ 151,670,428
	Bldg. A	23 00 00	Replace / Rework Existing EA				
	Bldg. A		Outside Air (Assembly)				
	Bldg. A	23 00 00	Replace / Rework Existing OA				
	Bldg. A		Return Air (Assembly)				
	Bldg. A	23 00 00	Replace / Rework Existing RA				
	Bldg. A		Supply Air (Assembly)				
	Bldg. A	23 00 00	Replace / Rework Existing SA and insulation (No TI Loops)				
	Bldg. A		D3070 - Special Purpose HVAC Systems				
	Bldg. A		DDC Controls from Div 25 00 00				
	Bldg. A	23 00 00	DDC Controls - New Core and Main only - Infrastruture only for all TI				
330	Bldg. A		D40 - Fire Protection				\$ 2,440,240
331	Bldg. A		D4010 - Fire Suppression				\$2,215,240
332	Bldg. A		Fire Extinguishing (Assembly)				\$8,800
333	Bldg. A	21 00 00	Secondary Wtr Storage-Piping & related (TANK Existing)	1	LS	8,800.00	\$8,800
334	Bldg. A		Fire Suppression Supplementary Components (Assembly)				\$12,000
335	Bldg. A	21 00 00	Rework Exisitng DDC / RPBFP	1	ALLOW	12,000.00	\$12,000
336	Bldg. A		Water-Based Fire-Suppression (Assembly)				\$2,194,440
337	Bldg. A	21 00 00	Fire Suppression System - Steel 40	731,480.00	SF	3	\$2,194,440
339	Bldg. A		D4030 - Fire Protection Specialties				\$225,000
340	Bldg. A		Fire Extinguisher Accessories (Assembly)				\$225,000
341	Bldg. A	21 00 00	(1) 1,500GPM Fire Pump system (incl JP and all assemblies)	1	LS	225,000.00	\$225,000
343	Bldg. A		D50 - Electrical				\$ 8,721,982
344	Bldg. A		D5020 - Electrical Services & Distribution				\$ 4,507,111
345	Bldg. A		Facility Grounding (Assembly)				\$ 156,473
346	Bldg. A	26 00 00	Ground / Bond upgrades: Core	731,480.00	SF	0.21	\$156,473
348	Bldg. A		Level Ground Up				\$ 4,305,018
349	Bldg. A	26 30 00	Service and Distribution- See Level Ground for Detail	731,480.00	LS	0.58	\$424,258
350	Bldg. A	26 40 00	Connection - Elevators 150A	14	EA	4,426.94	\$61,977
351	Bldg. A	26 40 00	Connection - Stair Press Fans 150A				
352	Bldg. A	26 40 00	Emergency - Legally Req Standby ATS (Size not shown)	1	EA	35,686.11	\$35,686
353	Bldg. A	26 40 00	Emergency - Life Safety ATS - 400A (Size not shown)	1	EA	35,686.11	\$35,686
354	Bldg. A	26 40 00	Emergency - Optional Stanby ATS (Size not shown)	1	EA	35,686.11	\$35,686
355	Bldg. A	26 40 00	Emergency - Panel Board 125A, 120/208v (Size not shown)	34	AL	1,681.36	\$57,166
356	Bldg. A	26 40 00	Emergency - XFRM - 45KVA	14	EA	3,234.37	\$45,281
357	Bldg. A	26 40 00	Main Switchboard "A" - 2500A (5)	1	LS	106,159.08	\$106,159
358	Bldg. A	26 40 00	Main Switchboard "A" - 5000A (10)	1	LS	563,554.90	\$563,555
359	Bldg. A	26 40 00	Main Switchboard "MSB" 6000A (4)	1	LS	273,958.91	\$273,959
360	Bldg. A	26 40 00	XFRM - 112.5KVA	32	EA	8,422.84	\$269,531

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1			--- Base Estimate ---				\$ 151,670,428
361	Bldg. A	26 40 00	XFRM - 30KVA (Std K-rating-typ.)	3	EA	2,656.80	\$7,970
362	Bldg. A	26 40 00	XFRM - 45KVA	5	EA	3,234.37	\$16,172
363	Bldg. A	26 40 00	XFRM - 75KVA	14	EA	3,786.27	\$53,008
364	Bldg. A	26 41 00	Bus Plug A- Fused- 125A	27	EA	1,143.37	\$30,871
365	Bldg. A	26 41 00	Bus Plug A- Fused- 175A	34	EA	2,111.33	\$71,785
366	Bldg. A	26 41 00	Bus Plug A- Fused- 225A	34	EA	2,956.28	\$100,514
367	Bldg. A	26 41 00	Bus Plug A- Fused- 50A	4	EA	526.23	\$2,105
368	Bldg. A	26 41 00	Bus Plug A- Fused- 70A	4	EA	1,059.94	\$4,240
369	Bldg. A	26 42 00	Panel Board 12BB - 125A, 120/208v	71	EA	1,681.36	\$119,377
370	Bldg. A	26 42 00	Panel Board HA1A- 225A, 120/208v	52	EA	1,681.36	\$87,431
371	Bldg. A	26 42 00	Panelboard 150A, 120/208v, 3ph, 4w - 84ckt (Tenant area)	100	LF	2,667.14	\$266,714
372	Bldg. A	26 44 00	Dist. Panel 225A, 120/208v, 3ph, 4w	14	LS	2,251.44	\$31,520
373	Bldg. A	26 44 00	Dist. Panel 400A, 120/208v, 3ph, 4w	35	LS	3,524.22	\$123,348
374	Bldg. A	26 44 00	Dist. Panel 600A, 120/208v, 3ph, 4w	10	EA	5,449.44	\$54,494
375	Bldg. A	26 44 00	Dist. Panel 800A, 120/208v, 3ph, 4w	2	EA	9,537.33	\$19,075
376	Bldg. A	26 44 00	Emergency - Dist. Panel 1000A, 120/208V, 3ph, 4w	8	EA	15,964.36	\$127,715
377	Bldg. A	26 50 00	C.O.: 200A into Retail/TI area	400	EA	26.6	\$10,640
378	Bldg. A	26 50 00	C.O.: 400A into Retail/TI area	100	EA	52.13	\$5,213
379	Bldg. A	26 50 00	Emergency - Feeder - Building C Emergency Dist Board 4000A	630	LF	560.88	\$353,355
380	Bldg. A	26 50 00	Emergency - Feeder - Dist. Panel 1000A, 120/208V, 3ph, 4w	1,200.00	LF	278.71	\$334,449
381	Bldg. A	26 50 00	Emergency - Feeder - Panel Board 125A, 120/208v	160	EA	34.29	\$5,486
382	Bldg. A	26 50 00	Emergency - Feeder - XFRM - 150A	140	EA	41.37	\$5,792
383	Bldg. A	26 50 00	Equipment Feeder - Elevators 150A	1,218.00	EA	41.37	\$50,390
384	Bldg. A	26 50 00	Equipment Feeder - Stair Press Fans 150A	108	EA	41.37	\$4,468
385	Bldg. A	26 50 00	Feeder - 150A	900	LF	41.37	\$37,234
386	Bldg. A	26 50 00	Feeder - 150A 1120/208v, 3ph, 4w - (Tenant area 84ckt PB)	1,000.00	LF	41.37	\$41,371
387	Bldg. A	26 50 00	Feeder - Bus Plug A- Fused- 125A	1,135.00	LF	34.29	\$38,920
388	Bldg. A	26 50 00	Feeder - Bus Plug A- Fused- 175A	460	LF	41.89	\$19,272
389	Bldg. A	26 50 00	Feeder - Bus Plug A- Fused- 225A	220	LF	48.03	\$10,568
390	Bldg. A	26 50 00	Feeder - Bus Plug A- Fused- 50A	355	LF	21.06	\$7,476
391	Bldg. A	26 50 00	Feeder - Bus Plug A- Fused- 70A	123	LF	30.69	\$3,774
392	Bldg. A	26 50 00	Feeder - Legally Req Standby ATS (Size not shown)	820	EA	108.77	\$89,195
393	Bldg. A	26 50 00	Feeder - Life Safety ATS 400a (Size not shown)	850	EA	108.77	\$92,459
394	Bldg. A	26 50 00	Feeder - Optional Stanby ATS (Size not shown)	510	EA	108.77	\$55,475
395	Bldg. A	26 50 00	Feeder - XFRM - 150A	50	EA	41.37	\$2,069
396	Bldg. A	26 50 00	Feeder - XFRM - 225A	140	EA	48.03	\$6,725
397	Bldg. A	26 50 00	Feeder - XFRM - 400A	300	EA	108.77	\$32,632
398	Bldg. A	26 50 00	Feeder - XFRM- 100A (EMT-typ.)	33	EA	39.33	\$1,298
399	Bldg. A	26 60 00	Util Service (EXIST): POC from Exsiting Util servce to New board: 2500A (480v)	1	LS	13,235.89	\$13,236
400	Bldg. A	26 60 00	Util Service (EXIST): POC from Exsiting Util servce to New board: 5000A (480v)	1	LS	26,471.79	\$26,472
401	Bldg. A	26 60 00	Util Service (EXIST): POC from Exsiting Util servce to New board: 6000A (480v)	1	LS	31,766.14	\$31,766
402	Bldg. A		Re-feed Existing				\$ 45,620
403	Bldg. A	26 00 00	Re-connect to Existing Bus-duct: Testing and re-torque	568.7	LF	80.22	\$45,620

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1			--- Base Estimate ---				\$ 151,670,428
404	Bldg. A		Service and Distribution				
	Bldg. A	26 00 00	"EF-1 Conductors- (1) 2" C.- (1) 3 #3/0 (400A)"				
	Bldg. A	26 00 00	"Main Ground- (1) 1" C. w/ (1) #3/0"				
	Bldg. A	26 00 00	"Meter CT Circuit- Swbd "A" to Swbd "B" - (1) 3/4" w/ (7) #12"				
	Bldg. A	26 00 00	"Pnl "1PPG" Conductors- (2) 3" C. w/ (3) #350 (800A)"				
	Bldg. A	26 00 00	"Pnl "2PPG" Conductors- (1) 1.5" C. w/ (3) #1 (150A)"				
	Bldg. A	26 00 00	"Pnl "GAA" Conductors- (1) 2.5" C. w/ (4) #3/0 (200A)"				
	Bldg. A	26 00 00	"Pnl "GMC" Conductors- (1) 1.5" C. w/ (3) #1 (100A)"				
	Bldg. A	26 00 00	"Service Feeders- Swbd "A"				
	Bldg. A	26 00 00	"Swbd "5MC" - (1) 1" C. w/ (3) #6 (60A)"				
	Bldg. A	26 00 00	"Xfmr @ Col. B-15- (1) 1/2" C. w/ (3) #10 (30A)"				
	Bldg. A	26 00 00	"Xfmr feeding "Not Marked" - (1) 1" C. w/ (3) #8 (40A)"				
405	Bldg. A		D5030 - General Purpose Electrical Power				\$ 1,282,227
406	Bldg. A		Branch Wiring System (Assembly)				\$ 108,677
407	Bldg. A	26 00 00	Branch Wiring- Devices - Conduit-Wiring-Boxes	9,557.76	LF	8.1	\$77,386
408	Bldg. A	26 00 00	Electrical Devices - User and Service (All Areas)	292.56	EA	106.96	\$31,291
409	Bldg. A	26 00 00	Floor box - Combo std use - Steel (All Finished Areas)				
410	Bldg. A		General Purpose Electrical Power Supplementary Components (Assembly)				\$ 1,173,550
411	Bldg. A	26 00 00	HVAC- Plumb- VT and arch elements: Electrical power and POC only	731,480.00	SF	1.6	\$1,173,550
412	Bldg. A		D5040 - Lighting				\$ 2,525,781
413	Bldg. A		Branch Wiring for Lighting (Assembly)				\$ 827,180
415	Bldg. A	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - EM CKT - Interior	53,500.00	LF	9.07	\$485,241
416	Bldg. A	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - Interior	20,700.00	LF	8.1	\$167,600
417	Bldg. A	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - per lf fixt Interior	800	LF	8.1	\$6,477
418	Bldg. A	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - per lf fixt Plaza Exterior	3,200.00	LF	7.39	\$23,650
419	Bldg. A	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - Plaza Exterior	15,900.00	LF	9.07	\$144,212
420	Bldg. A		Lighting Control (Assembly)				\$ 535,575
421	Bldg. A		Dimming Systems	1	LS	80,217.53	\$80,218
423	Bldg. A	26 00 00	DMX - Controller (Seq TBD)	3	LS	10,695.67	\$32,087
424	Bldg. A	26 00 00	Relay based Lighting Control system	731,480.00	SF	\$0.53	\$391,183
425	Bldg. A	26 00 00	Software & Programming	1	LS	32,087.01	\$32,087
426	Bldg. A		Lighting Fixtures (Assembly)				\$ 1,163,026
427	Bldg. A		Bridge - LED Overhead - Plaza / Exterior	44	EA	836.5	\$36,806

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1			--- Base Estimate ---				\$ 151,670,428
429	Bldg. A	26 00 00	Courtyard / Plaza - Fixture allowance (not landscape allow)	150	EA	817.09	\$122,563
430	Bldg. A	26 00 00	Exit Sign - 2 ckt with wiring - Amenities	12	EA	394.85	\$4,738
431	Bldg. A	26 00 00	Exit Sign - 2 ckt with wiring - Back of House	17	EA	394.85	\$6,712
432	Bldg. A	26 00 00	Exit Sign - 2 ckt with wiring - Circulation	24	EA	394.85	\$9,476
433	Bldg. A	26 00 00	Exit Sign - 2 ckt with wiring - Lobbies	5	EA	394.88	\$1,974
434	Bldg. A	26 00 00	Exit Sign - 2 ckt with wiring - Mart	10	EA	394.88	\$3,949
435	Bldg. A	26 00 00	Exit Sign - 2 ckt with wiring - Office	115	EA	394.88	\$45,412
436	Bldg. A	26 00 00	Exit Sign - 2 ckt with wiring - Retail	15	EA	394.88	\$5,923
437	Bldg. A	26 00 00	LED Decorative Pendant - Ext walkway in render				
438	Bldg. A	26 00 00	LED lensed strip - Back of House	231	EA	354.42	\$81,872
439	Bldg. A	26 00 00	LED lensed strip - MEP Offices	125	EA	354.42	\$44,303
440	Bldg. A	26 00 00	LED Linear Strip - Plaza / Exterior	382	LF	177.34	\$67,746
441	Bldg. A	26 00 00	LED Rope - 9th st	400	LF	87.77	\$35,107
442	Bldg. A	26 00 00	LED Rope - Interior st (continue from 9th)	800	LF	87.77	\$70,215
443	Bldg. A	26 00 00	Shell - LED strip - (Part on EM Ckt) - Amenities	2,361.00	EA	210	\$495,810
444	Bldg. A	26 00 00	Supports - fixtures: Grativy and Seismic	5,849.00	EA/LF	10.7	\$62,559
445	Bldg. A	26 00 00	TI - Decorative Wall - Lobbies	17	EA	918	\$15,606
446	Bldg. A	26 00 00	TI - LED Down/up light - Lobbies	31	EA	514.15	\$15,939
447	Bldg. A	26 00 00	TI - LED Linear - Lobbies	357	LF	101.73	\$36,316
448							
449	Bldg. A		D5080 - Miscellaneous Electrical Systems				\$406,863
450	Bldg. A		Miscellaneous Electrical Systems Supplementary Components (Assembly)				\$406,863
451	Bldg. A	26 00 00	Demolition: Electrical specific demo: Safe-cut-cap; Crtical removal only	320	HR	101.61	\$32,515
452	Bldg. A	26 00 00	Temp power and lighting during construction - phased	1	ALLOW	374,348.48	\$374,348
453							
454	Bldg. A		D60 - Low Voltage				\$ 1,064,957
455	Bldg. A		D6010 - Data Communications				\$830,247
456	Bldg. A		Data Communication Program and Integration Services (Assembly)				\$830,247
457	Bldg. A	27 00 00	4" C.O. Riser	900	SF	53.2	\$47,880
458	Bldg. A	27 00 00	New IT/IS (tele-data) Infrastructure (Vert. Core MDF/IDF's only)	731,480.00	SF	1.07	\$782,367
459							
460	Bldg. A		D6060 - Distributed Communications and Monitoring				\$234,710
461	Bldg. A		Distributed Systems (Assembly)				\$234,710
462	Bldg. A	27 00 00	DAS - Infrastructure and core services - Emergency services	731,480.00	SF	0.32	\$234,710
463							
464	Bldg. A		D70 - Security & Fire Alarm				\$ 1,603,852
465	Bldg. A		D7010 - Access Control and Intrusion Detection				\$273,828
466	Bldg. A		Intrusion Detection (Assembly)				\$273,828
467	Bldg. A	28 00 00	New Security Infrastructure (Vert. & horiz. Core and main term.)	731,480.00	SF	0.37	\$273,828
468							
469	Bldg. A		D7050 - Detection and Alarm				\$1,330,024
470	Bldg. A		Fire Detection and Alarm (Assembly)				\$1,330,024
471	Bldg. A	28 00 00	Emergency DAS (Distributed Antenna system) as required by code	731,480.00	SF	0.43	\$312,947
472	Bldg. A	28 00 00	Fire alarm system	731,480.00	SF	1.23	\$899,722

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
473	Bldg. A	28 00 00	Smoke Control System (Part of FA and DDC)	731,480.00	SF	0.16	\$117,355
474							
475	Bldg. A		F - Special Construction & Demolition				\$2,894,737
476	Bldg. A		F30 - Selective Interior Demolition				\$ 2,894,737
477	Bldg. A		F3010 - Structure Demolition				\$802,878
478	Bldg. A		Tower Demolition (Assembly)				\$802,878
479	Bldg. A	02 40 00	Demo Existing Curtainwall at Building A - Baseline Locations	1	LS	632,000.00	\$632,000
480	Bldg. A	02 40 00	Perimeter Protection at Removed Curtainwall (Rental Only)	8,554.00	LS	13.2	\$112,913
481	Bldg. A	02 40 00	Perimeter Protection at Roof (Rental Only)	2,688.00	LS	13.2	\$35,482
482	Bldg. A	02 40 00	Perimeter Protection Handling, Set up and Removal	11,242.00	LS	2	\$22,484
483							
484	Bldg. A		F3030 - Selective Demolition				\$2,091,859
485	Bldg. A		Selective Bridge Demolition (Assembly)				\$125,166
486	Bldg. A	02 40 00	Skybridge demolition between A&B on Level 2.	1	LS	20,861.00	\$20,861
487	Bldg. A	02 40 00	Skybridge demolition between A&B on Levels 4, 5, 6, 8, 10 and 12	5	EA	20,861.00	\$104,305
488							
489	Bldg. A		Selective Building Demolition (Assembly)				\$1,621,481
490	Bldg. A	02 40 00	Demo & Patch out openings for Elevator Mod Work	1	LS	50,000.00	\$50,000
491	Bldg. A	02 40 00	Demo & Remove Storefront and Entrance doors at 9th Street Entry	1	LS	1,500.00	\$1,500
492	Bldg. A	02 40 00	Demo & Remove Curtainwall Façade at Skybridge between A&B (N&S of All Levels)	1	LS	120,000.00	\$120,000
493	Bldg. A	02 40 00	Demo all exterior storefronts	1	LS	52,000.00	\$52,000
494	Bldg. A	02 40 00	Demo all stone flooring from Bldg A- B- C Lobbies	1	LS	29,680.00	\$29,680
495	Bldg. A	02 40 00	Demo and Remove Deck for (6) New Passenger Elevators (Level 1-13)	1	LS	135,608.00	\$135,608
496	Bldg. A	02 40 00	Demo and Remove Escalators at Skybridge between A&B (All Levels)	1	LS	380,000.00	\$380,000
497	Bldg. A	02 40 00	Demo and Remove Escalators from Levels 1-2	1	LS	60,000.00	\$60,000
498	Bldg. A	02 40 00	Demo Ground Floor Deck for added 2 escalator pits at base of new Feature Stair	1	LS	8,500.00	\$8,500
499	Bldg. A	02 40 00	Misc Shoring Allowance	1	LS	50,000.00	\$50,000
500	Bldg. A	02 40 00	Patch at removed skylights	1	LS	10,000.00	\$10,000
501	Bldg. A	02 40 00	Remove 2nd Floor Deck at Interior Street	1	LS	11,000.00	\$11,000
502	Bldg. A	02 40 00	Remove all existing roofing	1	LS	329,283.00	\$329,283
503	Bldg. A	02 40 00	Remove column covers	1	LS	6,300.00	\$6,300
504	Bldg. A	02 40 00	Remove Deck on 2nd floor at Street Entrance	1	LS	20,729.00	\$20,729
505	Bldg. A	02 40 00	Remove existing plaster ceilings for new MEP	1	LS	7,500.00	\$7,500
506	Bldg. A	02 40 00	Remove fireproofing on exposed structure at Interior Street	1	LS	20,000.00	\$20,000
507	Bldg. A	02 40 00	Remove front doors	1	LS	4,500.00	\$4,500
508	Bldg. A	02 40 00	Remove Skylights	1	LS	98,881.00	\$98,881
509	Bldg. A	02 40 00	Remove stairs adjacent to elevators on Level 2				
510	Bldg. A	02 40 00	Slab demolition to accommodate double height office lobby in A	1	LS	14,000.00	\$14,000
511	Bldg. A	02 40 00	Soft Demo of all Floors at Building A (possibly floors 4 and 5)	1	LS	212,000.00	\$212,000
512							
513	Bldg. A		Selective Interior Demolition (Assembly)				\$345,212

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1			--- Base Estimate ---				\$ 151,670,428
514	Bldg. A	02 40 00	Demo all existing concrete pads	1	LS	20,000.00	\$20,000
515	Bldg. A	02 40 00	Demo all existing MEPF systems	1	LS	273,212.00	\$273,212
516	Bldg. A	02 40 00	Demo all interior retail space and storefronts	1	LS	17,000.00	\$17,000
517	Bldg. A	02 40 00	Trash Chute for Building A/B (Allocated 50%)	1	LS	35,000.00	\$35,000
518							
519	Bldg. A		Z - General Requirements				\$ 1,472,353
520	Bldg. A		Z10 - General Requirements				\$ 1,472,353
521	Bldg. A		Z1050 - Temporary Facilities and Controls				\$1,472,353
522	Bldg. A		(Unassigned)				\$1,472,353
523	Bldg. A	01 74 16	General Requirements	1	LS	1,472,353.32	\$1,472,353
524	Bldg. A						
525	Bldg. A						
526	Bldg. B		Building B				\$ 38,105,551
527	Bldg. B		B - Shell				\$ 11,560,191
528	Bldg. B		B10 - Superstructure				\$ 2,562,290
529	Bldg. B		B1010 - Floor Construction				\$ 1,856,222
530	Bldg. B		CIP Concrete - 8" Walls for (4) New Passenger Elevator Pit (Assembly)				\$ 39,690
531	Bldg. B	03 20 00	Reinforcement - 20 LBS/SF (Includes Drill & Epoxy)	8,820.00	LBS	4.5	\$39,690
532							
533	Bldg. B		CIP Concrete - 8" Walls for (4) New Passenger Elevator Pit (Assembly)				\$ 80,324
534	Bldg. B	03 30 00	CIP Concrete - Assume 10% Waste	12.63	CY	374.99	\$4,736
535	Bldg. B	03 30 00	CIP Concrete - Finish	375.00	SF	3	\$1,125
536	Bldg. B	03 30 00	CIP Concrete - Place	12.63	CY	100.01	\$1,263
537	Bldg. B	03 30 00	Metal Decking (Previously Priced as Formwork)	375.00	SF	195.2	\$73,200
538	Bldg. B	03 30 00	CMU Wall	1,335.00	SF	45	incl. abv
539							
540	Bldg. B		CIP Concrete - Infill for Deleted Stairs Levels 1-6				\$ 54,825
541	Bldg. B	03 20 00	Infill for Deleted Stairs Levels 1-6 (includes concrete, metal deck & framing)	912.00	SF	\$60.12	incl. below
542	Bldg. B	03 30 00	CIP Concrete - Assume 10% Waste				
543	Bldg. B	03 30 00	CIP Concrete - Finish Top of Deck				
544	Bldg. B	03 30 00	CIP Concrete - Place				
545	Bldg. B	03 30 00	Formwork	912.00	SF	\$60.12	\$54,825
546	Bldg. B	03 30 00	Reshores				
547	Bldg. B	05 10 00	Structural Metal Framing Allowance				
548							
549	Bldg. B		CIP Concrete - Infill at Levels 10 - Roof for Mid Rise Elevator Machine Rooms				\$94,838
550	Bldg. B	03 20 00	Normal Weight Deck - 7.5 LBS/SF (Includes Drill & Epoxy)	21,075.00	SF	4.5	\$94,838
551							
552	Bldg. B		Misc. Structural Items				\$ 734,276
553	Bldg. B	03 30 00	CIP Concrete - Mechanical Pads - New AHUs	6,240.00	SF	40	\$249,600
554	Bldg. B	03 30 00	CIP Concrete - Mechanical Pads - Replacement Boilers	1,000.00	SF	40	\$40,000

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1			--- Base Estimate ---				\$ 151,670,428
555	Bldg. B	03 30 00	Concrete Curbs / Stem Walls at New Exterior Storefront	345	LF	125	\$43,125
556	Bldg. B	03 30 00	Repair Spalled Concrete	1	AL	27,000.00	\$27,000
557	Bldg. B	05 10 00	New Steel Pedetals for Replacement Cooling Towers (6 EA)	12	EA	9,129.24	\$109,551
558	Bldg. B	05 10 00	Structural Allowance for Strengthening Deck for New Rooftop Equipment	649	LF	408.32	\$265,000
560	Bldg. B		Structural Metal Framing for (6) New Passenger Elevator Openings				\$ 675,926
561	Bldg. B	05 21 23	Fireproofing	62	TN	1,772.78	\$109,913
562	Bldg. B	05 21 23	Structural Metal Framing	62	TN	9,129.24	\$566,013
564	Bldg. B		Structural Metal Framing for Extended Stair Openings				\$ -
565	Bldg. B	05 10 00	Fireproofing				
566	Bldg. B	05 10 00	Structural Metal Framing				
568	Bldg. B		Structural Metal Framing for New Passenger Elevator Roof Penthouse				\$ 176,343
569	Bldg. B	05 10 00	Structural Metal Framing	15.48	TN	9,129.24	\$141,275
570	Bldg. B	05 44 00	Fireproofing	15	TN	1,772.78	\$26,592
571	Bldg. B	05 44 00	Metal Decking	1,238.00	SF	6.85	\$8,476
573	Bldg. B		B1020 - Roof Construction				\$ 193,248
574	Bldg. B		Elevator Guiderail Support Steel				\$ 193,248
575	Bldg. B	05 10 00	Elevator Guiderail Support Steel & Hoist Beam	21.17	TN	9,129.24	\$193,248
577	Bldg. B		B1080 - Stairs				\$ -
578	Bldg. B		Stair Construction (Assembly)				\$ -
579	Bldg. B	05 51 00	Paint - Extended Stairs from from L6 to 13				
580	Bldg. B	05 51 00	Paint - Extended Stairs from L11 to 13				
582	Bldg. B		B1090 - Exterior Enclosure				\$ 512,820
583	Bldg. B		Metal Stud Framing				\$ 512,820
584	Bldg. B	07 20 00	Fire safing at building perimeter	16,198.00	LF	18	\$291,564
585	Bldg. B	07 20 00	Fire safing at building perimeter	12,292.00	LF	18	\$221,256
587	Bldg. B		B20 - Exterior Enclosure				\$ 7,540,995
588	Bldg. B		B2010 - Exterior Walls				\$ 7,082,257
589	Bldg. B		Exterior Wall Construction (Assembly)				\$ 638,377
590	Bldg. B	04 20 00	Precast Stone - Cleaning Pressure Wash	71,206.00	SF	2.05	\$145,972
591	Bldg. B	04 20 00	Precast Stone - Mock Up Allowance	1	AL	10,000.00	\$10,000
592	Bldg. B	04 20 00	Precast Stone - Protective Sealer	71,206.00	SF	1	\$71,206
593	Bldg. B	04 20 00	Precast Stone - Sealant Replacement	6,440.00	SF	14.93	\$96,128
594	Bldg. B	04 20 00	Precast Stone - Spall and Crack Repair Allowance	71,206.00	SF	2.3	\$163,774
595	Bldg. B	08 44 00	Restoration Work Swingstage Access	1	LS	45,000.00	\$45,000
596	Bldg. B	08 44 00	Restore Aluminum Mullions at Existing Curtainwall	1	LS	58,417.00	\$58,417
597	Bldg. B	08 44 00	Wetglaze Existing Curtain Wall - Facing C Building - Remove Gasket & Silicon	2,772.00	LF	10	\$27,720
598	Bldg. B	08 44 00	Wetglaze Existing Curtain Wall - Interior Street - Remove Gasket & Silicon	2,016.00	LF	10	\$20,160
600	Bldg. B		Exterior Wall Interior Skin (Assembly)				\$ 30,000

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1			--- Base Estimate ---				\$ 151,670,428
601	Bldg. B	09 90 00	Exterior walls & Ceilings	10,000.00	SF	3	\$30,000
603	Bldg. B		Fabricated Exterior Wall Assemblies (Assembly)				\$ 5,519,979
604	Bldg. B	08 44 00	Exterior Sealants at New Curtain Wall Off Swingstage	1	LS	40,000.00	\$40,000
605	Bldg. B	08 44 00	Replace Existing Curtain Wall - Panelized Window Wall System - EWS1 & EWS 8	42,464.00	SF	129.05	\$5,479,979
606	Bldg. B	08 44 00	Restoration Work Swingstage Access				
607	Bldg. B	08 44 00	Restore Aluminum Mullions at Existing Curtainwall				
608	Bldg. B	08 44 00	Wetglaze Existing Curtain Wall - Facing C Building - Remove Gasket & Silicon				
609	Bldg. B	08 44 00	Wetglaze Existing Curtain Wall - Interior Street - Remove Gasket & Silicon				
611	Bldg. B		Metal Stud Framing				\$ 893,901
612	Bldg. B	09 20 00	New Ground level Storefronts - Framing and Plaster	1	LS	175,000.00	\$175,000
613	Bldg. B	09 20 00	Patching of existing - Allowance	1	LS	50,000.00	\$50,000
614	Bldg. B	09 20 00	RFI 54 Furring at Interior of Precast Exterior	1	LS	600,000.00	\$600,000
615	Bldg. B	09 20 00	Temporary Weather Walls at Retail Storefront - Interior Street	4565	SF	7.00	\$31,955
616	Bldg. B	09 20 00	Temporary Weather Walls at Retail Storefront - Main Street	4022	SF	7.00	\$28,154
617	Bldg. B	09 20 00	Temporary Weather Walls at Retail Storefront - 9th Street	1256	SF	7.00	\$8,792
619	Bldg. B		B2020 - Exterior Windows				\$ 338,738
620	Bldg. B		Exterior Window Wall (Assembly)				\$ 338,738
621	Bldg. B	08 43 00	Storefront - Lobby Entrance - SF 01	1,451.00	SF	141.29	\$205,012
622	Bldg. B	08 43 00	Storefront - Retail Sheet Metal Transomes (Storefront Glass & Entrance Doors by Tenant)	1,413.00	SF	94.64	\$133,726
624	Bldg. B		B2050 - Exterior Doors and Grilles				\$ 120,000
625	Bldg. B		Exterior Entrance Doors (Assembly)				\$ 120,000
626	Bldg. B	08 42 26	All-Glass Entrances - Bridge	6	EA	15,000.00	\$90,000
627	Bldg. B	08 42 26	All-Glass Entrances - Retail	2	EA	15,000.00	\$30,000
629	Bldg. B		B30 - Roofing				\$ 1,456,906
630	Bldg. B		B3010 - Roofing				\$ 1,262,328
631	Bldg. B		Flashing & Accessories				\$ 1,262,328
632	Bldg. B	07 55 00	Membrane Roofing - Main Roof	35,780.00	SF	24	\$858,720
633	Bldg. B	07 55 00	Membrane Roofing - New Elevator Machine Room Penthouse	1,238.00	SF	24	\$29,712
634	Bldg. B	07 55 00	Membrane Roofing - Penthouse Areas	15,579.00	SF	24	\$373,896
636	Bldg. B		B3020 - Roof Appurtenances				\$ 10,000
637	Bldg. B		Flashing & Accessories				\$ 10,000
638	Bldg. B	05 51 33	Roof Ladders	1	LS	10,000.00	\$10,000
640	Bldg. B		B3040 - Traffic Bearing Horizontal Enclosures				\$ -
641	Bldg. B		Flashing & Accessories				\$ -
642	Bldg. B	07 10 00	Waterproofing_exterior deck at bridge				
644	Bldg. B		B3080 - Overhead Exterior Enclosures				\$ 184,578
645	Bldg. B		Metal Stud Framing				\$ 184,578

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1			--- Base Estimate ---				\$ 151,670,428
646	Bldg. B	09 20 00	Interior Street - Framing w/drywall at Interior and Densdeck and Ice & Water at Exterior	1	LS	100,000.00	\$100,000
647	Bldg. B	09 20 00	Plaster Trim	9.52	EA	105.21	\$1,002
648	Bldg. B	09 20 00	Plaster Wall 18'	2,454.52	SF	34.05	\$83,576
649							
650	Bldg. B		C - Interiors				\$ 4,470,633
651	Bldg. B		C10 - Interior Construction				\$ 1,972,533
652	Bldg. B		C1010 - Partitions				\$ 1,596,833
653	Bldg. B		Metal Stud Framing				\$ 1,596,833
654	Bldg. B	09 20 00	Gypsum Board - 1HR Wall 18'	2,355.34	SF	12.79	\$30,125
655	Bldg. B	09 20 00	Gypsum Board - 1HR Wall 12'	20,024.42	SF	14.07	\$281,744
656	Bldg. B	09 20 00	Gypsum Board - 2HR Shaft 18'	2,483.01	SF	15.77	\$39,157
657	Bldg. B	09 20 00	Gypsum Board - 2HR Shaft 12'	21,287.91	SF	18.43	\$392,336
658	Bldg. B	09 20 00	Gypsum Board - 2HR Wall 12'	5,443.68	SF	17.51	\$95,319
659	Bldg. B	09 20 00	Gypsum Board - 2HR Wall 18'	542.57	SF	16.97	\$9,207
660	Bldg. B	09 20 00	Gypsum Board - Backing	26,326.32	SF	1.96	\$51,600
661	Bldg. B	09 20 00	Gypsum Board - Corner Beads/ Finished Ends	1.19	LS	7,065.73	\$8,408
662	Bldg. B	09 20 00	Gypsum Board - Framing for Storefront 8'	573.29	SF	16.6	\$9,517
663	Bldg. B	09 20 00	Gypsum Board - Furring 12'	10,550.49	SF	9.47	\$99,913
664	Bldg. B	09 20 00	Gypsum Board - HMF	84.49	EA	475.4	\$40,167
665	Bldg. B	09 20 00	Gypsum Board - NR Wall 12'	22,177.98	SF	10.96	\$243,071
666	Bldg. B	09 20 00	Misc. Patching of Existing Walls	1.00	AL	35000	\$35,000
667	Bldg. B	09 20 00	Public Safety DAS Enclosure Allowance	1.00	AL	50000	\$50,000
668	Bldg. B	09 20 00	Gypsum Board Ceilings	17,650.00	SF	11.97	\$211,271
669							
670	Bldg. B		C1030 - Interior Doors				\$ 375,700
671	Bldg. B		Interior Doors				\$ 375,700
672	Bldg. B	08 11 00	Existing Door Repair - Allowance	133	AL	\$ 500	\$66,500
673	Bldg. B	08 11 00	Door - Double - fire rated w/exit devices	26	EA	5,800.00	\$150,800
674	Bldg. B	08 11 00	Single Fire rated doors w/exit devices	22	EA	3,000.00	\$66,000
675	Bldg. B	08 11 00	Single NR Doors w/hardware	44	EA	2,100.00	\$92,400
676							
677	Bldg. B		C20 - Interior Finishes				\$ 2,498,100
678	Bldg. B		C2010 - Wall Finishes				\$ 2,222,400
679	Bldg. B		Tile Wall Finish (Assembly)				\$ 1,976,400
680	Bldg. B	09 30 00	Elevator Lobby Finishes (Allowance)	3,200.00	SF	\$ 65	\$208,000
681	Bldg. B	09 30 00	Lobby Finishes (Allowance)	2,429.00	SF	\$ 350	\$850,150
682	Bldg. B	09 30 00	Restroom Finishes (Allowances)	7,346.00	SF	\$ 125	\$918,250
683							
684	Bldg. B		Wall Painting and Coating (Assembly)				\$ 246,000
685	Bldg. B	09 75 00	Interior Paint - Walls & ceilings	76,000.00	SF	3	\$228,000
686	Bldg. B	09 75 00	Misc. paint & Patch	1	LS	10,000.00	\$10,000
687	Bldg. B	09 75 00	New storefront bulheads	1	LS	8,000.00	\$8,000
688	Bldg. B	09 75 00	Paint framing at new precast - (interior side of precast)				
689	Bldg. B		C2020 - Interior Fabrications				\$ 193,000
690	Bldg. B		Interior Fabrication (Assembly)				\$0
691	Bldg. B	04 40 00	Stone Countertop - Lobby Reception Desk	1	AL	\$ 6,000	incl in Finish Allo
692	Bldg. B	06 44 00	Ornamental Woodwork - Lobby Reception Desk	1	AL	\$ 24,000	incl in Finish Allo
693	Bldg. B		Signage (Assembly)				\$193,000
694	Bldg. B	10 15 00	Code Signage Allowance	1	AL	\$ 193,000	\$193,000

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1			--- Base Estimate ---				\$ 151,670,428
696	Bldg. B		C2030 - Flooring				\$ 82,700
697	Bldg. B		Specialty Flooring (Assembly)				\$82,700
698	Bldg. B	09 35 00	Chemical-Resistant Flooring - New Elevator Machine Room	1,238.00	SF	5	\$6,190
699	Bldg. B	09 84 00	Water-Resistant Flooring - Mechanical Rooms	15,302.00	SF	5	\$76,510
701	Bldg. B		Tile Flooring (Assembly)				\$ -
702	Bldg. B	09 30 00	Tile Flooring in Parking Elevator Cabs				
703	Bldg. B	09 30 00	Tile Flooring in Passenger Elevator Cabs				
705	Bldg. B		D - Services				\$ 19,796,169
706	Bldg. B		D10 - Conveying				\$ 5,150,019
707	Bldg. B		D1010 - Vertical Conveying Systems				\$ 5,150,019
708	Bldg. B		Elevators (Assembly)				\$ 5,150,019
709	Bldg. B	14 20 00	Parking Garage Elevators B5, B6 - Modernize Geared Traction w/ 3000 lb capacity 350 fpm	2	EA	254,740.00	\$509,480
710	Bldg. B	14 20 00	Passenger Elevators - B9 Thru B14 - New High-Rise Gearless Traction w/ 4000 lb capacity and 700 fpm	4	EA	583,582.00	\$2,334,328
711	Bldg. B	14 20 00	Passenger Elevators - Modernize - Low-Rise B1, B2, B3, B4 - Gearless Traction w/ 3000 lb capacity 500 fpm	4	EA	357,202.00	\$1,428,808
712	Bldg. B	14 20 00	Service Elevator B7 - Large - Modernize Geared Traction w/ 4500 lb capacity 250 fpm	1	EA	398,782.00	\$398,782
713	Bldg. B	14 20 00	Service Elevator B8 - Small - Modernize Geared Traction w/ 3000 lb capacity 250 fpm	1	EA	329,121.00	\$329,121
714	Bldg. B	09 30 00	Tile Flooring in Parking Elevator Cabs	80	SF	30	\$2,400
715	Bldg. B	09 30 00	Tile Flooring in Passenger Elevator Cabs	320	SF	30	\$9,600
716	Bldg. B	14 20 00	Temporary use maintenance	1	LS	37,500.00	\$37,500
717	Bldg. B	14 20 00	Temporary Use of Existing Modernized Freight Cars, Includes temp use inspection, clean-downs after temp use	2	EA	50,000.00	\$100,000
719	Bldg. B		D20 - Plumbing				\$ 1,617,124
720	Bldg. B		D2010 - Domestic Water Distribution				\$ 845,361
721	Bldg. B		Domestic Water Equipment (Assembly)				\$107,112
722	Bldg. B	22 00 00	DW Storage Tank Fill pump and controls panel	2	EA	34,024.31	\$68,049
723	Bldg. B	22 00 00	Gas Water Heater - Hi Delta	1	EA	25,278.07	\$25,278
724	Bldg. B	22 00 00	Sewage Ejector	1	EA	13,784.84	\$13,785
726	Bldg. B		Domestic Water Piping (Assembly)				\$390,010
727	Bldg. B	22 00 00	2" DW: Piping into Tenant space: Stub-cap	3,900.00	LF	35.39	\$138,003
728	Bldg. B	22 00 00	Domestic Water Distribution - CU=vert; PEX=horiz	497,790.00	SF	0.23	\$112,913
729	Bldg. B	22 00 00	Fill pump - Piping manifold and connect to Existing	2	EA	1,950.73	\$3,901
730	Bldg. B	22 00 00	MECH Condensate drain: AHU	3	EA	920.92	\$2,763
731	Bldg. B	22 00 00	MECH Condensate drain: Fan Coil	91	EA	476.34	\$43,347
732	Bldg. B	22 00 00	MECH: Make Up Water - Cooling Tower	1	EA	4,082.92	\$4,083
733	Bldg. B	22 00 00	Replace DW Risers	1	EA	85,000.00	\$85,000
735	Bldg. B		Plumbing Fixtures (Assembly)				\$ 348,239
736	Bldg. B	22 00 00	Fixture: Drain Rough-in to existing	55	EA	558	\$30,690

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
737	Bldg. B	22 00 00	Fixture: Rough-in to existing Wet-Stacks (Including all Horizontal	110	EA	851.97	\$93,717
738	Bldg. B	22 00 00	Floor Drains	54	EA	442.32	\$23,885
739	Bldg. B	22 00 00	Lavatory	44	EA	1,703.48	\$74,953
740	Bldg. B	22 00 00	Roof Receptor	1	EA	587.94	\$588
741	Bldg. B	22 00 00	Urinal	11	EA	1,556.05	\$17,116
742	Bldg. B	22 00 00	Water Closet	55	EA	1,950.73	\$107,290
743							
744	Bldg. B		D2020 - Sanitary Drainage				\$ 646,628
745	Bldg. B		Sanitary Drainage Supplementary Components (Assembly)				\$39,967
746	Bldg. B	22 00 00	Grease Interceptor - 2-000gal (System & Core piping)	1	LS	26,357.50	\$26,358
747	Bldg. B	22 00 00	Water Treatment - Rework / modify Existing	1	AL	13,609.73	\$13,610
748							
749	Bldg. B		Sanitary Sewer Piping (Assembly)				\$ 606,661
750	Bldg. B	22 00 00	4" SS, 2" Vent: Piping into Tenant space: Stub-cap	3,900.00	LF	91.95	\$358,605
751	Bldg. B	22 00 00	Sanitary Drainage (new waste/vent) - PVC	417,870.00	SF	0.25	\$104,468
752	Bldg. B	22 00 00	VTR	2	EA	326.63	\$653
753	Bldg. B	22 00 00	Replace SS Risers	1	LS	85000	\$85,000
754	Bldg. B	22 00 00	Add: Horizontal and POC-"E" from new wet-Stack (Assume 4")	225	LF	69.25	\$15,581
755	Bldg. B	22 00 00	Wet Stack for Future T.I. (3-13)	13	EA	3,258.00	\$42,354
756							
757	Bldg. B		D2030 - Building Support Plumbing Systems				\$ 78,523
758	Bldg. B		Stormwater Drainage Piping (Assembly)				\$78,523
759	Bldg. B	22 00 00	Storm Water rework (Misc rework existing)	497,790.00	SF	0.09	\$45,165
760	Bldg. B	22 80 00	Meters, wet valve install and low voltage wiring for shown equipment and systems	1	LS	22,682.88	\$22,683
761	Bldg. B	22 80 00	Insulation: Condensate drains 3/4	3939	LF	2.71	\$10,675
762							
763	Bldg. B		D2060 - Process Support Plumbing Systems				\$ 46,612
764	Bldg. B		Gas Systems (Assembly)				\$46,612
765	Bldg. B	22 00 00	MECH: Gas: HHW Boiler	3	EA	3,493.16	\$10,479
766	Bldg. B	22 00 00	Natural Gas - system rework (LP) - ALLOWANCE	497,790.00	SF	0.07	\$36,132
767							
768	Bldg. B		D30 - HVAC				\$ 4,845,146
769	Bldg. B		D3030 - Cooling Systems				\$ 4,845,146
770	Bldg. B		Central Cooling (Assembly)				\$ 2,356,815
771	Bldg. B	23 00 00	Cooling Tower - 3 Cell	1375	TN	171.03	\$235,166
772	Bldg. B	23 00 00	Heat Exchanger (HX)	3,300.00	GPM	67.00	\$221,100
773	Bldg. B	23 00 00	Tower pump (open) - CTP	3330	GPM	13.92	\$46,354
774	Bldg. B	23 00 00	Tower pump (closed) - CWP	4,950.00	GPM	16.25	\$80,438
775	Bldg. B	23 00 00	HHW pump (closed) - HWP	300	GPM	16.25	\$4,875
776	Bldg. B	23 00 00	VRF - Condenser (WC)	26.00	ALLOW	11,828.00	\$307,528
777	Bldg. B	23 00 00	VRF - Fan Coil	39	EA	2,575.00	\$100,425
778	Bldg. B	23 00 00	VRF - Fan Coil	52	ALLOW	2,575.00	\$133,900
779	Bldg. B	23 00 00	Water Treatment	1.00	ALLOW	35,256.00	\$35,256
780	Bldg. B	23 00 00	AHU (DOAS)	120000	CFM	5.00	\$600,000
781	Bldg. B	23 00 00	Gravity Ventilator (GV)	3	ALLOW	5,128.00	\$15,384

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1			--- Base Estimate ---				\$ 151,670,428
782	Bldg. B	23 00 00	Packaged AC (RTU)	4,000.00	CFM	11.75	\$47,000
783	Bldg. B	23 00 00	HHW Boiler - Condensing	6000	MBH	37.63	\$225,780
784	Bldg. B	23 00 00	Exhaust Fan (RT)	116,000.00	CFM	1.01	\$117,160
785	Bldg. B	23 00 00	Stairwell Pressurization Fan (SF)				
786	Bldg. B	23 00 00	VFD: Pump	9.00	EA	7,500.00	\$67,500
787	Bldg. B	23 00 00	TENANT: Dual-Level Rack for future WC CU (Narrative)	130	EA	915.00	\$118,950
788	Bldg. B		Cooling System Supplementary Components (Assembly)				\$ 211,561
789	Bldg. B	23 00 00	Test and Balance	497790	SF	0.25	\$124,448
790	Bldg. B	23 00 00	Temporary ventilation	497,790.00	LS	0.13	\$62,224
791	Bldg. B	23 00 00	Safe-off	497,790.00	SF	0.05	\$24,890
792	Bldg. B		DDC Controls from Div 25 00 00				\$ 657,083
793	Bldg. B	23 00 00	DDC Controls - New Core and Main only. Infrastructure only for all TI	497,790.00	SF	1.00	\$497,790
794	Bldg. B	23 00 00	Submetering:	497,790.00	ALLOW	0.07	\$34,845
795	Bldg. B	23 00 00	Smoke Control: DDC Related (See ELEC)	497,790.00	ALLOW	0.25	\$124,448
796	Bldg. B		Facility Hydronic Distribution (Assembly)				\$ 531,132
797	Bldg. B	23 00 00	VRF: Branch Selector - 6-port (min)	26.00	Ea	1,475.00	\$38,350
798	Bldg. B	23 00 00	10" Piping	739.20	LF	127.60	\$94,322
799	Bldg. B	23 00 00	4" Piping	2,126.30	LF	64.40	\$136,934
800	Bldg. B	23 00 00	Branch Piping: water	497,790.00	ALLOW	0.25	\$124,448
801	Bldg. B	23 00 00	Refrigerant piping: VRF	497,790.00	ALLOW	0.10	\$49,779
802	Bldg. B	23 00 00	Gauges, valves and SOV's	4.00	ALLOW	15,000.00	\$60,000
803	Bldg. B	23 00 00	TENANT: Branch Stub-in MECH ROOM)	1,300.00	ALLOW	21.00	\$27,300
804	Bldg. B		Supply Air (Assembly)				\$ 1,088,555
805	Bldg. B	23 00 00	Ductwork: 80x30	3,859.22	Lbs.	9.75	\$37,627
806	Bldg. B	23 00 00	Ductwork: 70x40	5,416.45	Lbs.	9.75	\$52,810
807	Bldg. B	23 00 00	Ductwork: 60x50	20,332.95	Lbs.	9.75	\$198,246
808	Bldg. B	23 00 00	Ductwork: 60x15	4,775.81	Lbs.	9.75	\$46,564
809	Bldg. B	23 00 00	Ductwork: 48x12	9,110.77	Lbs.	9.75	\$88,830
810	Bldg. B	23 00 00	Ductwork: 34x34	12,271.44	Lbs.	9.75	\$119,647
811	Bldg. B	23 00 00	Ductwork: 38x8	5,870.18	Lbs.	9.75	\$57,234
812	Bldg. B	23 00 00	Ductwork: 24o	1,051.84	Lbs.	9.75	\$10,255
813	Bldg. B	23 00 00	Ductwork: Branch completion for TBD (Round, Rect, Flex)	497,790.00	ALLOW	0.30	\$149,337
814	Bldg. B	23 00 00	TENANT: Ductwork Stub-in	1,300.00	ALLOW	62.00	\$80,600
815	Bldg. B	23 00 00	Inline Duct Silencers - 36000cfm on EF only (4) & 8000cfm (1)	4.00	ALLOW	4,800.00	\$19,200
816	Bldg. B	23 00 00	Insulation: Dry	9,275.67	ALLOW	2.09	\$19,386
817	Bldg. B	23 00 00	Insulation: Wet	2,865.50	ALLOW	13.00	\$37,252
818	Bldg. B	23 00 00	Dampers (all)	497,790.00	ALLOW	0.18	\$89,602
819	Bldg. B	23 00 00	Grilles, Registers and Diffusers	497,790.00	ALLOW	0.15	\$74,669
820	Bldg. B	23 00 00	Interior Louvers	1.00	ALLOW	7,295.00	\$7,295
821							
822	Bldg. B		D3050 - Facility HVAC Distribution Systems				
823	Bldg. B		Facility Hydronic Distribution (Assembly)				
824	Bldg. B	23 00 00	Option 3 - Rework existing CHW and HHW piping; new insulation				
825							
826	Bldg. B		D3060 - Ventilation				\$ -
827	Bldg. B		Exhaust Air (Assembly)				

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1			--- Base Estimate ---				\$ 151,670,428
828	Bldg. B	23 00 00	Replace / Rework Existing EA				
829	Bldg. B		Outside Air (Assembly)				
830	Bldg. B	23 00 00	Replace / Rework Existing OA				
831	Bldg. B		Return Air (Assembly)				
832	Bldg. B	23 00 00	Replace / Rework Existing RA				
833	Bldg. B		Supply Air (Assembly)				
834	Bldg. B	23 00 00	Replace / Rework Existing SA and insulation (NO TI Loops)				
836	Bldg. B		D3070 - Special Purpose HVAC Systems				\$ -
837	Bldg. B		DDC Controls from Div 25 00 00				
838	Bldg. B	23 00 00	DDC Controls - New Core and Main only. Infrastructure only for all TI				
840	Bldg. B		D40 - Fire Protection				\$ 1,505,370
841	Bldg. B		D4010 - Fire Suppression				\$ 1,505,370
842	Bldg. B		Fire Suppression Supplementary Components (Assembly)				\$12,000
843	Bldg. B	21 00 00	Rework Existing DDC / RPBFP	1	ALLOW	12,000.00	\$12,000
845	Bldg. B		Water-Based Fire-Suppression (Assembly)				\$1,493,370
846	Bldg. B	21 00 00	Fire Suppression System - Steel 40	497,790.00	SF	3	\$1,493,370
848	Bldg. B		D50 - Electrical				\$ 4,846,826
849	Bldg. B		D5020 - Electrical Services & Distribution				\$ 2,349,002
850	Bldg. B		Facility Grounding (Assembly)				\$106,496
851	Bldg. B	26 00 00	Ground / Bond upgrades: Core	497,790.00	SF	0.21	\$106,496
853	Bldg. B		Level Ground Up				\$ 2,187,262
854	Bldg. B	26 30 00	Service and Distribution- See Level Ground for Detail	497,790.00	SF	\$ 0.85	\$ 423,122
855	Bldg. B	26 40 00	Connection - Elevators 150A	12	EA	4,427.42	\$53,129
856	Bldg. B	26 40 00	Connection - Stair Press Fans 150A				
857	Bldg. B	26 40 00	Emergency - Legally Req Standby ATS (Size not shown)	1	EA	35,689.98	\$35,690
858	Bldg. B	26 40 00	Emergency - Life Safety ATS - 400A (Size not shown)	1	EA	35,689.98	\$35,690
859	Bldg. B	26 40 00	Emergency - Optional Standby ATS (Size not shown)	1	EA	35,689.98	\$35,690
860	Bldg. B	26 40 00	Emergency - Panel Board 125A, 120/208v (Size not shown)	16	AL	1,681.54	\$26,905
861	Bldg. B	26 40 00	Emergency - XFRM - 45KVA	7	EA	3,234.72	\$22,643
862	Bldg. B	26 40 00	Main Switchboard "C" - 1000A (10)	1	LS	112,723.23	\$112,723
863	Bldg. B	26 40 00	Main Switchboard "MSB" 5000A (5)	1	LS	91,297.47	\$91,297
864	Bldg. B	26 40 00	Main Switchboard "MSBB" - 2000A (5)	1	LS	106,170.62	\$106,171
865	Bldg. B	26 40 00	XFRM - 112.5KVA	25	EA	8,423.76	\$210,594
866	Bldg. B	26 40 00	XFRM - 75KVA	3	EA	3,786.68	\$11,360
867	Bldg. B	26 41 00	Bus Plug A- Fused- 125A	4	EA	1,143.49	\$4,574
868	Bldg. B	26 41 00	Bus Plug A- Fused- 175A	22	EA	2,111.55	\$46,454
869	Bldg. B	26 41 00	Bus Plug A- Fused- 225A	22	EA	2,956.60	\$65,045
870	Bldg. B	26 42 00	Panel Board 12BB - 125A, 120/208v	24	EA	1,681.54	\$40,357
871	Bldg. B	26 42 00	Panel Board HA1A- 225A, 120/208v	34	LF	1,681.54	\$57,172
872	Bldg. B	26 44 00	Dist. Panel 100A, 120/208v, 3ph, 4w	4	EA	1,681.54	\$6,726
873	Bldg. B	26 44 00	Dist. Panel 150A, 120/208v, 3ph, 4w	12	EA	1,919.01	\$23,028
874	Bldg. B	26 44 00	Dist. Panel 225A, 120/208v, 3ph, 4w	24	LS	2,251.68	\$54,040

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1			--- Base Estimate ---				\$ 151,670,428
875	Bldg. B	26 44 00	Dist. Panel 400A, 120/208v, 3ph, 4w	27	LS	3,524.61	\$95,164
876	Bldg. B	26 44 00	Emergency - Dist. Panel 1000A, 120/208V, 3ph, 4w	4	EA	15,966.09	\$63,864
877	Bldg. B	26 50 00	C.O.: 200A into Retail/TI area	450	EA	26.6	\$11,971
878	Bldg. B	26 50 00	Emergency - Feeder - Dist. Panel 1000A, 120/208V, 3ph, 4w	675	LF	278.74	\$188,148
879	Bldg. B	26 50 00	Emergency - Feeder - Panel Board 125A, 120/208v	435	EA	34.29	\$14,918
880	Bldg. B	26 50 00	Emergency - Feeder - XFRM - 150A	70	EA	41.38	\$2,896
881	Bldg. B	26 50 00	Equipment Feeder - Elevators 150A	1,044.00	EA	41.38	\$43,196
882	Bldg. B	26 50 00	Equipment Feeder - Stair Press Fans 150A	420	EA	41.38	\$17,378
883	Bldg. B	26 50 00	Equipment Feeder assembly: 750KW	265	LF	245.14	\$64,962
884	Bldg. B	26 50 00	Feeder - 1200A, 120/208V, 3ph, 4w	25	LF	387.56	\$9,689
885	Bldg. B	26 50 00	Feeder - 400A, 120/208V, 3ph, 4w	30	LF	108.79	\$3,264
886	Bldg. B	26 50 00	Feeder - Bus Plug A- Fused- 125A	80	LF	34.29	\$2,744
887	Bldg. B	26 50 00	Feeder - Bus Plug A- Fused- 175A	420	LF	41.9	\$17,598
888	Bldg. B	26 50 00	Feeder - Bus Plug A- Fused- 225A	440	LF	48.04	\$21,137
889	Bldg. B	26 50 00	Feeder - Legally Req Standby ATS (Size not shown)	410	EA	108.79	\$44,603
890	Bldg. B	26 50 00	Feeder - Life Safety ATS 400a (Size not shown)	410	EA	108.79	\$44,603
891	Bldg. B	26 50 00	Feeder - Optional Stanby ATS (Size not shown)	230	EA	108.79	\$25,021
892	Bldg. B	26 50 00	Feeder - XFRM - 150A	70	EA	41.38	\$2,896
893	Bldg. B	26 50 00	Feeder - XFRM - 225A	30	EA	48.04	\$1,441
894	Bldg. B	26 50 00	Feeder - XFRM - 400A	25	EA	108.79	\$2,720
895	Bldg. B	26 60 00	Util Service (EXIST): POC from Exsiting Util servce to New board: 1000A (480v)	1	LS	9,573.67	\$9,574
896	Bldg. B	26 60 00	Util Service (EXIST): POC from Exsiting Util servce to New board: 2000A (480v)	1	LS	10,589.87	\$10,590
897	Bldg. B	26 60 00	Util Service (EXIST): POC from Exsiting Util servce to New board: 5000A (480v)	1	LS	26,474.66	\$26,475
898							
899	Bldg. B		Re-feed Existing				\$55,244
900	Bldg. B	26 00 00	Re-connect to Existing Bus-duct: Testing and re-torque	688.6	LF	80.23	\$55,244
901							
902	Bldg. B		D5030 - General Purpose Electrical Power				\$ 874,703
903	Bldg. B		Branch Wiring System (Assembly)				\$ 75,986
904	Bldg. B	26 00 00	Branch Wiring- Devices - Conduit-Wiring-Boxes	6,753.48	LF	8.1	\$54,686
905	Bldg. B	26 00 00	Electrical Devices - User and Service (All Areas)	199.12	EA	106.97	\$21,300
906	Bldg. B	26 00 00	Floor box - Combo std use - Steel (All Finished Areas)				
907	Bldg. B		General Purpose Electrical Power Supplementary Components (Assembly)				\$ 798,717
908	Bldg. B	26 00 00	HVAC- Plumb- VT and arch elements: Electrical power and POC only	497,790.00	SF	1.6	\$798,717
909							
910	Bldg. B		D5040 - Lighting				\$ 1,302,334
911	Bldg. B		Branch Wiring for Lighting (Assembly)				\$403,895
912	Bldg. B	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - EM CKT - Interior	31,700.00	LF	9.07	\$287,548
913	Bldg. B	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - Interior	12,100.00	LF	8.1	\$97,980
914	Bldg. B	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - per lf fixt Interior	700	LF	8.1	\$5,668
915	Bldg. B	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - Plaza Exterior	1,400.00	LF	9.07	\$12,699
916							

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1			--- Base Estimate ---				\$ 151,670,428
917	Bldg. B		Lighting Control (Assembly)				\$410,646
918	Bldg. B	26 00 00	Dimming Systems	1	LS	80,226.25	\$80,226
919	Bldg. B	26 00 00	DMX - Controller (Seq TBD)	3	LS	10,696.83	\$32,091
920	Bldg. B	26 00 00	Relay based Lighting Control system	497,790.00	SF	0.53	\$266,239
921	Bldg. B	26 00 00	Software & Programming	1	LS	32,090.50	\$32,091
922							
923	Bldg. B		Lighting Fixtures (Assembly)				\$ 487,793
924	Bldg. B	26 00 00	Exit Sign - 2 ckt with wiring - Amenities	9	EA	394.89	\$3,554
925	Bldg. B	26 00 00	Exit Sign - 2 ckt with wiring - Back of House	4	EA	394.89	\$1,580
926	Bldg. B	26 00 00	Exit Sign - 2 ckt with wiring - Circulation	19	EA	394.89	\$7,503
927	Bldg. B	26 00 00	Exit Sign - 2 ckt with wiring - Lobbies	5	EA	394.93	\$1,975
928	Bldg. B	26 00 00	Exit Sign - 2 ckt with wiring - Mart	3	EA	394.93	\$1,185
929	Bldg. B	26 00 00	Exit Sign - 2 ckt with wiring - Office	65	EA	394.93	\$25,670
930	Bldg. B	26 00 00	Exit Sign - 2 ckt with wiring - Retail	8	EA	394.93	\$3,159
931	Bldg. B	26 00 00	LED Decorative Pendant - Ext walkway in render				
932	Bldg. B	26 00 00	LED lensed strip - Back of House	151	EA	354.46	\$ 53,523
933	Bldg. B	26 00 00	LED lensed strip - MEP Offices	132	EA	354.46	\$ 46,789
934	Bldg. B	26 00 00	Shell - LED strip - (Part on EM Ckt) - Amenities	1,359.00	LF	210	\$ 285,390
935	Bldg. B	26 00 00	Supports - fixtures: Gravity and Seismic	2,556.00	EA/LF	10.7	\$ 27,349
936	Bldg. B	26 00 00	TI - Decorative Wall - Lobbies	16	EA	918.1	\$ 14,690
937	Bldg. B	26 00 00	TI - LED Down/up light - Lobbies	30	EA	514.21	\$ 15,426
938							
939	Bldg. B		D5080 - Miscellaneous Electrical Systems				\$ 320,787
940	Bldg. B		Miscellaneous Electrical Systems Supplementary Components (Assembly)				\$320,787
941	Bldg. B	26 00 00	Demolition: Electrical specific demo: Safe-cut-cap; Crtical removal only	262	HR	101.62	\$26,624
942	Bldg. B	26 00 00	Temp power and lighting during construction - phased	1	ALLOW	294,162.92	\$294,163
943							
944	Bldg. B		D60 - Low Voltage				\$ 740,106
945	Bldg. B		D6010 - Data Communications				\$ 580,363
946	Bldg. B		Data Communication Program and Integration Services (Assembly)				\$580,363
947	Bldg. B	27 00 00	4" C.O. Riser	900	SF	53.21	\$47,885
948	Bldg. B	27 00 00	New IT/IS (telte-data) Infrastructure (Vert. Core MDF/IDF's only)	497,790.00	SF	1.07	\$532,478
949							
950	Bldg. B		D6060 - Distributed Communications and Monitoring				\$ 159,743
951	Bldg. B		Distributed Systems (Assembly)				\$159,743
952	Bldg. B	27 00 00	DAS - Infrastructure and core services - Emergency services	497,790.00	SF	0.32	\$159,743
953							
954	Bldg. B		D70 - Security & Fire Alarm				\$ 1,091,579
955	Bldg. B		D7010 - Access Control and Intrusion Detection				\$ 186,367
956	Bldg. B		Intrusion Detection (Assembly)				\$186,367
957	Bldg. B	28 00 00	New Security Infrastructure (Vert. & horiz. Core and main term.)	497,790.00	SF	0.37	\$186,367
958							
959	Bldg. B		D7050 - Detection and Alarm				\$ 905,212
960	Bldg. B		Fire Detection and Alarm (Assembly)				\$905,212
961	Bldg. B	28 00 00	Emergency DAS (Distributed Antennae system) as required by code	497,790.00	SF	0.43	\$212,991

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
962	Bldg. B	28 00 00	Fire alarm system	497,790.00	SF	1.23	\$612,349
963	Bldg. B	28 00 00	Smoke Control System (Part of FA and DDC)	497,790.00	SF	0.16	\$79,872
964							
965	Bldg. B		F - Special Construction & Demolition				\$ 1,312,607
966	Bldg. B		F30 - Selective Interior Demolition				\$ 1,312,607
967	Bldg. B		F3010 - Structure Demolition				\$ 386,525
968	Bldg. B		Tower Demolition (Assembly)				\$386,525
969	Bldg. B	02 40 00	Demo Existing Curtainwall at Building A - Baseline Locations	1		298,000.00	\$298,000
970	Bldg. B	02 40 00	Perimeter Protection at Removed Curtainwall (Rental Only)	5,824.00	LS	13.2	\$76,877
971	Bldg. B	02 40 00	Perimeter Protection Handling, Set up and Removal	5,824.00	LS	2	\$11,648
972							
973	Bldg. B		F3030 - Selective Demolition				\$ 926,082
974	Bldg. B		Selective Building Demolition (Assembly)				\$ 612,882
975	Bldg. B	02 40 00	Demo stairs, floor slab and structure from Floors 1-6	1	LS	50,000.00	\$50,000
976	Bldg. B	02 40 00	Demo all exterior storefronts	1	LS	35,000.00	\$35,000
977	Bldg. B	02 40 00	Demo and Remove Deck for (4) New Passenger Elevators (Level 1-13)	1	LS	133,902.00	\$133,902
978	Bldg. B	02 40 00	Remove all existing roofing	1	LS	181,779.00	\$181,779
979	Bldg. B	02 40 00	Remove circular obstruction on Main Street	1	LS	10,300.00	\$10,300
980	Bldg. B	02 40 00	Remove existing plaster ceilings for new MEP	1	LS	10,000.00	\$10,000
981	Bldg. B	02 40 00	Remove walls as necessary for new Lobby addition	1	LS	30,901.00	\$30,901
982	Bldg. B	02 40 00	Soft Demo of All Floors at Building B (possible floors 4 and 5)	1	LS	147,000.00	\$147,000
983	Bldg. B	02 40 00	Slab demolition to accommodate double height office lobby in B	1	LS	7,000.00	\$7,000
984	Bldg. B	02 40 00	Slab demolition to accommodate double height office lobby in B	1	LS	7,000.00	\$7,000
985							
986	Bldg. B		Selective Interior Demolition (Assembly)				\$313,200
987	Bldg. B	02 40 00	Demo all existing concrete pads	1	LS	20,000.00	\$20,000
988	Bldg. B	02 40 00	Demo all existing MEPF systems	1	LS	241,200.00	\$241,200
989	Bldg. B	02 40 00	Demo all interior retail space and storefronts	1	LS	17,000.00	\$17,000
990	Bldg. B	02 40 00	Trash Chute	1	LS	35,000.00	\$35,000
991							
992	Bldg. B		Z - General Requirements				\$ 965,951
993	Bldg. B		Z10 - General Requirements				\$ 965,951
994	Bldg. B		Z1050 - Temporary Facilities and Controls				\$ 965,951
995	Bldg. B		(Unassigned)				\$965,951
996	Bldg. B	01 74 16	General Requirements	1	LS	965,950.64	\$965,951
997	Bldg. B						
998	Bldg. B						
999	Bldg. C		Building C				\$ 35,627,321
1000	Bldg. C		B - Shell				\$ 6,022,338
1001	Bldg. C		B10 - Superstructure				\$ 1,989,765
1002	Bldg. C		B1010 - Floor Construction				\$ 1,607,265
1003	Bldg. C		CIP Concrete - Infill at Level 1 & 2 at Deleted Escalators & Stair				\$324,280

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1			--- Base Estimate ---				\$ 151,670,428
1004	Bldg. C	03 20 00	Normal Weight Deck - 5 LBS/SF (Includes Drill & Epoxy)	16,000.00	Lbs.	4.5	\$72,000
1005	Bldg. C	03 30 00	Bottom of Slab	3,200.00	SF	10	\$32,000
1006	Bldg. C	03 30 00	CIP Concrete - Assume 10% Waste	66	CY	375.01	\$24,751
1007	Bldg. C	03 30 00	CIP Concrete - Finish Top of Deck	3,200.00	SF	3	\$9,600
1008	Bldg. C	03 30 00	CIP Concrete - Place	66	CY	100.01	\$6,601
1009	Bldg. C	03 30 00	Metal Decking (Previously Priced as Formwork)	3,200.00	SF	30	\$96,000
1010	Bldg. C	05 10 00	Structural Metal Framing Allowance		EA	20,832.22	\$83,329
1011							
1012	Bldg. C		CIP Concrete - Infill at Level 2				\$106,313
1013	Bldg. C	03 20 00	Normal Weight Deck - 7.5 LBS/SF (Includes Drill & Epoxy)	23,625.00	SF	4.5	\$106,313
1014							
1015	Bldg. C		CIP Concrete - Infill at Level - Widening of Level 2 Bridge				\$ 208,516
1016	Bldg. C	03 30 00	CIP Concrete - Assume 10% Waste	27.5	CY	375	\$10,313
1017	Bldg. C	03 30 00	CIP Concrete - Finish Top of Deck	1,306.00	SF	3	\$3,918
1018	Bldg. C	03 30 00	CIP Concrete - Place	27.5	CY	100	\$2,750
1019	Bldg. C	03 30 00	Metal Decking (Previously Priced as Formwork)	1,306.00	SF	35	\$45,710
1020	Bldg. C	03 30 00	Reshores				
1021	Bldg. C	05 10 00	Structural Metal Framing Allowance	7	EA	20,832.22	\$145,826
1022							
1023	Bldg. C		Misc. Structural Items				\$569,850
1024	Bldg. C	03 30 00	CIP Concrete - Mechanical Pads - New AHUs	6,240.00	SF	40	\$249,600
1025	Bldg. C	05 10 00	Structural Openings for Replacement Escalators at Bridge	14	EA	20,000	\$ 280,000
1026	Bldg. C	06 16 00	Concrete Curbs / Stem Walls at New Exterior Storefront	322	LF	125	\$40,250
1027							
1028	Bldg. C		Structural Metal Framing for (1) Extended Stair Opening L2 - 3				\$164,008
1029	Bldg. C	05 10 00	Structural Metal Framing	7	TN	21,657.00	\$151,599
1030	Bldg. C	05 44 00	Fireproofing	7	TN	1,772.78	\$12,409
1031							
1032	Bldg. C		Structural Metal Framing for (2) New Escalator Openings				\$234,298

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1			--- Base Estimate ---				\$ 151,670,428
1033	Bldg. C	05 21 23	Fireproofing	10	TN	1,772.78	\$17,728
1034	Bldg. C	05 21 23	Structural Metal Framing	10	TN	21,657.00	\$216,570
1035							
1036	Bldg. C		B1080 - Stairs				\$382,500
1037	Bldg. C		Stair Construction (Assembly)				\$382,500
1038	Bldg. C	05 51 00	Fire exit stairs from Ground Level to Level 4 and transfer stair from L4 to L5	1	LFR	160,000.00	\$160,000
1039	Bldg. C	05 51 00	Paint - New Stairs from L1 to 2	1	LS	7,500.00	\$7,500
1040	Bldg. C	05 51 00	Paint - New Stairs from L2 to 3	1	LS	15,000.00	\$15,000
1041	Bldg. C	05 51 00	Showcase stair from Level 02 - Level 03	1	LS	200,000.00	\$200,000
1042							
1043	Bldg. C		B20 - Exterior Enclosure				\$ 2,651,228
1044	Bldg. C		B2010 - Exterior Walls				\$ 2,322,342
1045	Bldg. C		Fabricated Exterior Wall Assemblies (Assembly)				\$2,226,667
1046	Bldg. C	08 44 00	Repair Broken Glass at Existing Curtain Wall (Assume 5%)	1	LS	25,000.00	\$25,000
1047	Bldg. C	08 44 00	Reseal Existing Curtain Wall - Wet Seal (Remove Exist. Gasket & Silicone)	134,847	LS	5.86	\$790,419
1048	Bldg. C	08 44 00	Restoration Work Swingstage Access	1	LS	95,000.00	\$95,000
1049	Bldg. C	08 44 00	Restore Aluminum Mullions at Existing Curtainwall	134,847	LS	9.76	\$1,316,248
1050							
1051	Bldg. C		Metal Stud Framing				\$95,675
1052	Bldg. C	09 20 00	Patching of existing - Allowance	1	LS	50,000.00	\$50,000
1053	Bldg. C	09 20 00	Temporary Weather Walls at Retail Storefront - Interior Street	6525	SF	7	\$45,675
1054	Bldg. C	09 20 00	RFI 54 Furring at Interior of Precast Exterior				
1055							
1056	Bldg. C		B2020 - Exterior Windows				\$ 276,886
1057	Bldg. C		Exterior Window Wall (Assembly)				\$ 276,886
1058	Bldg. C	08 43 00	Demo & Remove Existing Curtainwall Bridge Connection from Bldg C to A/B at Ground Floor and Level 2	3,120.00	SF	28.19	\$ 87,953
1059	Bldg. C	08 43 00	Guardrail Glass at Bldg C 2nd Floor Entry	70	LF	425	\$ 29,750
1060	Bldg. C	08 43 00	Guardrail Glass at Feature Stair				
1061	Bldg. C	08 43 00	Guardrail Glass at L2-3 Staircase	64	LF	500	\$ 32,000
1062	Bldg. C	08 43 00	Guardrail Glass at L2-3 Staircase Perimeter	88	LF	425	\$ 37,400
1063	Bldg. C	08 43 00	Remove existing curtainwall and replace with new louver for outside air intakes at Grid lines 3c & 4c / 18	1	LS	25,000.00	\$ 25,000
1064	Bldg. C	08 43 00	Storefront - Lobby Entrance at 2nd Floor	502	SF	129.05	\$ 64,783
1065							
1066	Bldg. C		B2050 - Exterior Doors and Grilles				\$52,000
1067	Bldg. C		Exterior Entrance Doors (Assembly)				\$45,000
1068	Bldg. C	08 42 26	All-Glass Entrance	3	EA	15,000.00	\$45,000
1069							
1070	Bldg. C		Frames				\$7,000
1071	Bldg. C	08 36 00	Exterior Door - Double w/hardware	2	EA	3,500.00	\$7,000
1072							
1073	Bldg. C		B30 - Roofing				\$ 1,381,345

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1			--- Base Estimate ---				\$ 151,670,428
1074	Bldg. C		B3010 - Roofing				\$ 1,301,652
1075	Bldg. C		Flashing & Accessories				\$ 1,301,652
1076	Bldg. C	07 50 00	Membrane Roofing - Bridge to Olymic Parking	2,782.00	SF	24	\$66,768
1077	Bldg. C	07 50 00	Membrane Roofing - Main Roof	44,131.00	SF	24	\$1,059,144
1078	Bldg. C	07 50 00	Membrane Roofing - Penthouse Areas				
1079	Bldg. C	07 50 00	Helipad Recoating	14,645.00	SF	12	\$175,740
1080							
1081	Bldg. C		B3040 - Traffic Bearing Horizontal Enclosures				\$19,803
1082	Bldg. C		Flashing & Accessories				\$19,803
1083	Bldg. C	07 10 00	Waterproofing_ exterior deck at bridge	1	LS	19,803.00	\$19,803
1084							
1085	Bldg. C		B3080 - Overhead Exterior Enclosures				\$59,890
1086	Bldg. C		Metal Stud Framing				\$59,890
1087	Bldg. C	09 20 00	Plaster Mock up Allowance	1	LS	2,500.00	\$2,500
1088	Bldg. C	09 20 00	Plaster Trim	8.19	EA	105.21	\$862
1089	Bldg. C	09 20 00	Plaster Wall 18'	1,660.16	SF	34.05	\$56,528
1090							
1091	Bldg. C		C - Interiors				\$ 4,020,432
1092	Bldg. C		C10 - Interior Construction				\$ 2,023,377
1093	Bldg. C		C1010 - Partitions				\$ 1,604,477
1094	Bldg. C		Metal Stud Framing				\$1,604,477
1095	Bldg. C	09 20 00	Gypsum Board - 1HR Wall 18'	617.69	SF	12.79	\$7,900
1096	Bldg. C	09 20 00	Gypsum Board - 1HR Wall 12'	33,261.46	SF	14.07	\$467,989
1097	Bldg. C	09 20 00	Gypsum Board - 2HR Shaft12'	1,699.12	SF	18.43	\$31,315
1098	Bldg. C	09 20 00	Gypsum Board - 2HR Wall 12'	12,726.42	SF	17.51	\$222,840
1099	Bldg. C	09 20 00	Gypsum Board - 2HR Wall 18'	1,479.46	SF	16.97	\$25,107
1100	Bldg. C	09 20 00	Gypsum Board - Backing	22,488.90	SF	1.96	\$44,078
1101	Bldg. C	09 20 00	Gypsum Board - Corner Beads/ Finished Ends	1.17	LS	4,946.00	\$5,787
1102	Bldg. C	09 20 00	Gypsum Board - Furring 12'	10,505.99	SF	9.47	\$99,492
1103	Bldg. C	09 20 00	Gypsum Board - Furring 18'	66.76	SF	8.54	\$570
1104	Bldg. C	09 20 00	Gypsum Board - HMF	98.28	EA	475.4	\$46,722
1105	Bldg. C	09 20 00	Gypsum Board - NR Wall 12'	22,193.59	SF	10.96	\$243,242
1106	Bldg. C	09 20 00	Plaster Ceilings	8,945.00	SF	36.27	\$324,435
1107	Bldg. C	09 20 00	Plaster Wall 18' x2				
1108	Bldg. C	09 20 00	Misc. Patch of Existing Walls	1.00	LS	\$ 35,000	\$ 35,000
1109	Bldg. C	09 20 00	Public Safety DAS Enclosure Allowance	1.00	LS	\$ 50,000	\$ 50,000
1110							
1111	Bldg. C		C1030 - Interior Doors				\$ 418,900
1112	Bldg. C		Frames				\$ 418,900
1113	Bldg. C	7 11 00	Existing Door Repair - Allowance	221	EA	\$ 500	\$ 110,500
1114	Bldg. C	08 11 00	Door - Double - fire rated w/exit devices	36	EA	5,800.00	\$208,800
1115	Bldg. C	08 11 00	Single Fire rated doors w/exit devices	12	EA	3,000.00	\$36,000
1116	Bldg. C	08 11 00	Single NR Doors w/hardware	26	EA	2,100.00	\$54,600
1117	Bldg. C	08 36 00	Exterior Door - Single w/hardware	4	EA	2,250.00	\$9,000
1118							
1119	Bldg. C		C20 - Interior Finishes				\$ 1,997,055
1120	Bldg. C		C2010 - Wall Finishes				\$ 1,777,625
1121	Bldg. C		Tile Wall Finish (Assembly)				\$ 1,496,125
1122	Bldg. C	09 30 00	Elevator Lobby Finishes (Allowance)	3,315.00	SF	\$ 65	\$ 215,475
1123	Bldg. C	09 30 00	Lobby Finishes (Allowance)	1,034.00	SF	\$ 350	\$ 361,900

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1			--- Base Estimate ---				\$ 151,670,428
1124	Bldg. C	09 30 00	Restroom Finishes (Allowances)	7,350.00	SF	\$ 125	\$ 918,750
1125							
1126	Bldg. C		Wall Painting and Coating (Assembly)				\$281,500
1127	Bldg. C	09 75 00	Exterior walls & Ceilings	15,000.00	SF	3	\$45,000
1128	Bldg. C	09 75 00	Interior Paint - Walls & ceilings	70,500.00	LS	3	\$211,500
1129	Bldg. C	09 75 00	Misc. paint & Patch	1	LS	10,000.00	\$10,000
1130	Bldg. C	09 75 00	Paint framing at new precast - (interior side of precast)	1	LS	15,000.00	\$15,000
1131							
1132	Bldg. B		C2020 - Interior Fabrications				\$ 193,000
1133	Bldg. B		Interior Fabrication (Assembly)				\$0
1134	Bldg. C	04 40 00	Stone Countertop - Lobby Reception Desk	1	AL	\$ 6,000	incl in Finish Allo
1135	Bldg. C	06 44 00	Ornamental Woodwork - Lobby Reception Desk	1	AL	\$ 24,000	incl in Finish Allo
1136	Bldg. B		Signage (Assembly)				\$193,000
1137	Bldg. C	10 15 00	Code Signage Allowance	1	AL	\$ 193,000	\$193,000
1138							
1139	Bldg. C		C2030 - Flooring				\$ 26,430
1140	Bldg. C		Specialty Flooring (Assembly)				\$26,430
1141	Bldg. C	09 35 00	Chemical-Resistant Flooring - New Elevator Machine Room	1,238.00	SF	5	\$6,190
1142	Bldg. C	09 84 00	Water-Resistant Flooring - Mechanical Rooms	4,048.00	SF	5	\$20,240
1143							
1144	Bldg. C		Tile Flooring (Assembly)				
1145	Bldg. C	09 30 00	Tile Flooring in Passenger Elevator Cabs				
1146							
1147	Bldg. C		D - Services				\$ 23,551,038
1148	Bldg. C		D10 - Conveying				\$ 5,414,900
1149	Bldg. C		D1010 - Vertical Conveying Systems				\$ 5,414,900
1150	Bldg. C		Elevators (Assembly)				\$3,212,980
1151	Bldg. C	14 20 00	Passenger Elevators - Modernize C1 Thru C6 - Gearless Traction w/ 3000 lb capacity 500 fpm	6	EA	370,690.00	\$2,224,140
1152	Bldg. C	14 20 00	Service Elevator C7 - Small - Modernize Geared Traction w/ 3000 lb capacity 250 fpm	1	LS	330,194.00	\$330,194
1153	Bldg. C	14 20 00	Service Elevator C8 - Large - Modernize Geared Traction w/ 4500 lb capacity 250 fpm	1	LS	338,946.00	\$338,946
1154	Bldg. C	14 20 00	Temporary use maintenance	1	LS	37,500.00	\$37,500
1155	Bldg. C	14 20 00	Temporary Use of Existing Modernized Freight Cars, Includes temp use inspection, clean-downs after temp use	2	EA	50,000.00	\$100,000
1156	Bldg. C	14 20 00	ADA Lift at Bldg C Entrance	1	AL	175,000.00	\$175,000
1157	Bldg. C	09 30 00	Tile Flooring in Passenger Elevator Cabs	240	SF	30	\$7,200
1158							
1159	Bldg. C		Escalators (Assembly)				\$2,201,920
1160	Bldg. C	14 31 00	Escalator - Feature Stair				
1161	Bldg. C	14 31 00	Escalators - New - Level 2 to 3	2	EA	137,620.00	\$275,240
1162	Bldg. C	14 31 00	Escalators - New - Levels 3-10	14	EA	137,620.00	\$1,926,680
1163							
1164	Bldg. C		D20 - Plumbing				\$ 1,595,084
1165	Bldg. C		D2010 - Domestic Water Distribution				\$ 988,859
1166	Bldg. C		Domestic Water Piping (Assembly)				\$653,087
1167	Bldg. C	22 00 00	2" DW: Piping into Tenant space: Stub-cap	3,900.00	LF	29.76	\$116,080
1168	Bldg. C	22 00 00	Domestic Water Distribution - CU=vert; PEX=horiz	594,510.00	SF	0.22	\$131,578

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1			--- Base Estimate ---				\$ 151,670,428
1169	Bldg. C	22 00 00	MECH Condensate drain: AHU	4	EA	774.63	\$3,099
1170	Bldg. C	22 00 00	MECH Condensate drain: Fan Coil	12	EA	400.67	\$4,808
1171	Bldg. C	22 00 00	MECH: Make Up Water - Cooling Tower	91	EA	3,434.31	\$312,522
1172	Bldg. C	22 00 00	Replace DW Risers	1	LS	\$85,000	\$85,000
1174	Bldg. C		Plumbing Fixtures (Assembly)				\$335,772
1175	Bldg. C	22 00 00	Fixture: Drain Rough-in to existing	56	EA	469.36	\$26,284
1176	Bldg. C	22 00 00	Fixture: Rough-in to existing Wet-Stacks (Including all Horizontal	129	EA	716.63	\$92,445
1177	Bldg. C	22 00 00	Floor Drains	54	EA	372.05	\$20,091
1178	Bldg. C	22 00 00	Hub Drain - Assumed for reworked FP	1	EA	877.66	\$878
1179	Bldg. C	22 00 00	Lavatory	44	EA	1,432.87	\$63,046
1180	Bldg. C	22 00 00	Mop Sinks	8	EA	1,230.24	\$9,842
1181	Bldg. C	22 00 00	Roof Receptor	1	EA	494.54	\$495
1182	Bldg. C	22 00 00	Urinal	11	EA	1,308.85	\$14,397
1183	Bldg. C	22 00 00	Water Closet	66	EA	1,640.84	\$108,295
1185	Bldg. C		D2020 - Sanitary Drainage				\$ 497,434
1186	Bldg. C		Sanitary Drainage Supplementary Components (Assembly)				\$33,618
1187	Bldg. C	22 00 00	Grease Interceptor - 2-000gal (System & Core piping)	1	LS	22,170.36	\$22,170
1188	Bldg. C	22 00 00	Water Treatment - Rework / modify Existing	1	AL	11,447.69	\$11,448
1190	Bldg. C		Sanitary Sewer Piping (Assembly)				\$463,816
1191	Bldg. C	22 00 00	4" SS, 2" Vent: Piping into Tenant space: Stub-cap	3,900.00	LF	79.12	\$308,568
1192	Bldg. C	22 00 00	Replace SS Risers	1	LS	\$85,000	\$85,000
1193	Bldg. C	22 00 00	Add: Horizontal and POC-"E" from new wet-Stack (Assume 4")	290	LF	69.25	\$20,083
1194	Bldg. C	22 00 00	Sanitary Drainage (new waste/vent) - PVC	594,510.00	SF	0.02	\$11,890
1195	Bldg. C	22 00 00	VTR	2	EA	274.74	\$549
1196	Bldg. C	22 00 00	Wet Stack for Future T.I. (3-13)	13	EA	2,902.00	\$37,726
1198	Bldg. C		D2030 - Building Support Plumbing Systems				\$ 63,679
1199	Bldg. C		Stormwater Drainage Piping (Assembly)				\$63,679
1200	Bldg. C	22 00 00	Storm Water rework (Misc rework existing)	594,510.00	SF	0.08	\$45,372
1201	Bldg. C	22 80 00	Meters, wet valve install and low voltage wiring for shown equipment and systems	1	LS	7,631.79	\$7,632
1202	Bldg. C	22 00 00	Insulation: Condensate drain 3/4	3939	LF	2.71	\$10,675
1204	Bldg. C		D2060 - Process Support Plumbing Systems				\$ 45,112
1205	Bldg. C		Gas Systems (Assembly)				\$45,112
1206	Bldg. C	22 00 00	MECH: Gas: HHW Boiler	3	EA	2,938.24	\$8,815
1207	Bldg. C	22 00 00	Natural Gas - system rework (LP) - ALLOWANCE	594,510.00	SF	0.06	\$36,297
1209	Bldg. C		D30 - HVAC				\$ 6,057,186
1210	Bldg. C		D3030 - Cooling Systems				\$ 6,057,186
1211	Bldg. C		Central Cooling (Assembly)				\$2,834,192
1212	Bldg. C	23 00 00	Cooling Tower - 3 Cell	1749.99993	TN	171.03	\$299,302
1213	Bldg. C	23 00 00	Heat Exchanger (HX)	4,200.00	GPM	67	\$281,400
1214	Bldg. C	23 00 00	Tower pump (open) - CTP	5200	GPM	13.92	\$72,384
1215	Bldg. C	23 00 00	Tower pump (closed) - CWP	5,850.00	GPM	16.25	\$95,063
1216	Bldg. C	23 00 00	HHW pump (closed) - HWP	300	GPM	16.25	\$4,875
1217	Bldg. C	23 00 00	VRF - Condenser (WC)	26.00	ALLOW	11828	\$307,528

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1218	Bldg. C	23 00 00	VRF - Fan Coil	39	EA	2575	\$100,425
1219	Bldg. C	23 00 00	VRF - Fan Coil	52	ALLOW	2575	\$133,900
1220	Bldg. C	23 00 00	Water Treatment	1	ALLOW	35,256.00	\$35,256
1221	Bldg. C	23 00 00	AHU (DOAS)	160000	CFM	5	\$800,000
1222	Bldg. C	23 00 00	Gravity Ventilator (GV)	3	ALLOW	5128	\$15,384
1223	Bldg. C	23 00 00	Packaged AC (RTU)	4,000.00	CFM	11.75	\$47,000
1224	Bldg. C	23 00 00	HHW Boiler - Condensing	6000	MBH	37.6300025	\$225,780
1225	Bldg. C	23 00 00	Exhaust Fan (RT)	157,000.00	CFM	1.01	\$158,570
1226	Bldg. C	23 00 00	Stairwell Pressurization Fan (SF)	31500	CFM	2.25	\$70,875
1227	Bldg. C	23 00 00	VFD: Pump	9.00	EA	7500	\$67,500
1228	Bldg. C	23 00 00	TENANT: Dual-Level Rack for future WC CU (Narrative)	130	EA	915	\$118,950
1229	Bldg. C		Cooling System Supplementary Components (Assembly)				\$252,667
1230	Bldg. C	23 00 00	Test and Balance	594510	SF	0.25	\$148,628
1231	Bldg. C	23 00 00	Temporary ventilation	594,510.00	LS	0.125	\$74,314
1232	Bldg. C	23 00 00	Safe-off	594,510.00	SF	0.05	\$29,726
1233	Bldg. C		DDC Controls from Div 25 00 00				\$784,753
1234	Bldg. C	23 00 00	DDC Controls - New Core and Main only. Infrastructure only for all TI	594,510.00	SF	1	\$594,510
1235	Bldg. C	23 00 00	Submetering:	594,510.00	ALLOW	0.07	\$41,616
1236	Bldg. C	23 00 00	Smoke Control: DDC Related (See ELEC)	594,510.00	ALLOW	0.25	\$148,628
1237	Bldg. C		Facility Hydronic Distribution (Assembly)				\$728,402
1238	Bldg. C	23 00 00	VRF: Branch Selector - 6-port (min)	26.00	Ea	1475	\$38,350
1239	Bldg. C	23 00 00	10" Piping	1,069.20	LF	127.6	\$136,430
1240	Bldg. C	23 00 00	4" Piping	4,010.00	LF	64.4	\$258,244
1241	Bldg. C	23 00 00	Branch Piping: water	594,510.00	ALLOW	0.25	\$148,628
1242	Bldg. C	23 00 00	Refrigerant piping: VRF	594,510.00	ALLOW	0.1	\$59,451
1243	Bldg. C	23 00 00	Gauges, valves and SOV's	4.00	ALLOW	15000	\$60,000
1244	Bldg. C	23 00 00	TENANT: Branch Stub-in	1,300.00	ALLOW	21	\$27,300
1245	Bldg. C		Supply Air (Assembly)				\$1,457,172
1246	Bldg. C	23 00 00	Ductwork: 60x50	61,790.06	Lbs.	9.75	\$602,453
1247	Bldg. C	23 00 00	Ductwork: 48x20	3,050.33	Lbs.	9.75	\$29,741
1248	Bldg. C	23 00 00	Ductwork: 34x34	8,958.15	Lbs.	9.75	\$87,342
1249	Bldg. C	23 00 00	Ductwork: 26o	1,126.08	Lbs.	9.75	\$10,979
1250	Bldg. C	23 00 00	Ductwork: Branch completion for TBD (Round, Rect, Flex)	594,510.00	ALLOW	0.3	\$178,353
1251	Bldg. C	23 00 00	TENANT: Ductwork Stub-in	1,300.00	ALLOW	62	\$80,600
1252	Bldg. C	23 00 00	Sound Traps	4.00	ALLOW	4800	\$19,200
1253	Bldg. C	23 00 00	Insulation: Dry	61,790.06	ALLOW	2.09	\$129,141
1254	Bldg. C	23 00 00	Insulation: Wet	8,913.80	ALLOW	13	\$115,879
1255	Bldg. C	23 00 00	Dampers (all)	594,510.00	ALLOW	0.18	\$107,012
1256	Bldg. C	23 00 00	Grilles, Registers and Diffusers	594,510.00	ALLOW	0.15	\$89,177
1257	Bldg. C	23 00 00	Interior Louvers	1.00	ALLOW	7295	\$7,295
1258							
1259	Bldg. C		D40 - Fire Protection				\$ 2,014,080
1260	Bldg. C		D4010 - Fire Suppression				\$ 1,804,330
1261	Bldg. C		Fire Extinguishing (Assembly)				\$8,800
1262	Bldg. C	21 00 00	Secondary Wtr Storage-Piping & related (TANK Existing)	1	LS	8,800.00	\$8,800
1263							

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1264	Bldg. C		Fire Suppression Supplementary Components (Assembly)				\$12,000
1265	Bldg. C	21 00 00	Rework Existing DDC / RPBFP	1	ALLOW	12,000.00	\$12,000
1266	Bldg. C		Water-Based Fire-Suppression (Assembly)				\$1,783,530
1267	Bldg. C	21 00 00	Fire Suppression System - Steel 40	594,510.00	SF	3	\$1,783,530
1269	Bldg. C		D4030 - Fire Protection Specialties				\$ 209,750
1270	Bldg. C		Fire Extinguisher Accessories (Assembly)				\$209,750
1271	Bldg. C	21 00 00	(1) 1,500GPM Fire Pump system REUSE Existing JP and all assemblies)	1	LS	209,750.00	\$209,750
1273	Bldg. C		D50 - Electrical				\$ 6,101,624
1274	Bldg. C		D5020 - Electrical Services & Distribution				\$ 2,983,407
1275	Bldg. C		Facility Grounding (Assembly)				\$138,275
1276	Bldg. C	26 00 00	Ground / Bond upgrades: Core	594,510.00	SF	0.23	\$138,275
1278	Bldg. C		Level Ground Up				\$ 2,807,139
1279	Bldg. C	26 30 00	Service and Distribution- See Level Ground for Detail	594,510.00	LS	0.94	\$558,839
1280	Bldg. C	26 40 00	Connection - Elevators 150A	10	EA	4,813.37	\$48,134
1281	Bldg. C	26 40 00	Connection - Stair Press Fans 150A	2	EA	3,173.64	\$6,347
1282	Bldg. C	26 40 00	Emergency - Legally Req Standby ATS (Size not shown)	2	EA	38,801.19	\$77,602
1283	Bldg. C	26 40 00	Emergency - Life Safety ATS - 400A (Size not shown)	2	EA	38,801.19	\$77,602
1284	Bldg. C	26 40 00	Emergency - Optional Standby ATS (Size not shown)	1	EA	38,801.19	\$38,801
1285	Bldg. C	26 40 00	Emergency - Panel Board 125A, 120/208v (Size not shown)	22	AL	1,828.13	\$40,219
1286	Bldg. C	26 40 00	Main Switchboard "MSA/B" - 4000A (2)	2	LS	98,039.73	\$196,079
1287	Bldg. C	26 40 00	Main Switchboard / Meter "MSC" - 1600A (5)	1	LS	92,340.21	\$92,340
1288	Bldg. C	26 40 00	XFRM - 112.5KVA	17	EA	9,158.08	\$155,687
1289	Bldg. C	26 40 00	XFRM - 150KVA	10	EA	8,765.79	\$87,658
1290	Bldg. C	26 40 00	XFRM - 45KVA	9	EA	3,516.70	\$31,650
1291	Bldg. C	26 41 00	Bus Plug A- Fused- 175A	26	EA	2,295.63	\$59,686
1292	Bldg. C	26 41 00	Bus Plug A- Fused- 225A	26	EA	3,214.34	\$83,573
1293	Bldg. C	26 42 00	Panel Board 12BB - 125A, 120/208v	34	EA	1,828.13	\$62,156
1294	Bldg. C	26 42 00	Panel Board HA1A- 225A, 120/208v	26	EA	1,828.13	\$47,531
1295	Bldg. C	26 44 00	Dist. Panel 1600A, 120/208v, 3ph, 4w	1	LS	19,644.23	\$19,644
1296	Bldg. C	26 44 00	Dist. Panel 400A, 120/208v, 3ph, 4w	16	LS	3,831.86	\$61,310
1297	Bldg. C	26 44 00	Emergency - Dist. Panel 1000A, 120/208V, 3ph, 4w	11	EA	17,357.91	\$190,937
1298	Bldg. C	26 50 00	Emergency - Feeder - Dist. Panel 1000A, 120/208V, 3ph, 4w	675	LF	303.04	\$204,550
1299	Bldg. C	26 50 00	Emergency - Feeder - Panel Board 125A, 120/208v	435	EA	37.28	\$16,218
1300	Bldg. C	26 50 00	Emergency - Feeder - Panel Board 400A, 120/208v	770	EA	118.27	\$91,068
1301	Bldg. C	26 50 00	Emergency - Feeder - XFRM - 150A	70	EA	44.98	\$3,149
1302	Bldg. C	26 50 00	Equipment Feeder - Elevators 150A	870	EA	44.98	\$39,134
1303	Bldg. C	26 50 00	Equipment Feeder - Stair Press Fans 150A	315	EA	44.98	\$14,169
1304	Bldg. C	26 50 00	Equipment Feeder assembly: 2000KW	265	LF	732.51	\$194,114
1305	Bldg. C	26 50 00	Feeder - 1600A, 120/208V, 3ph, 4w	10	LF	561.79	\$5,618
1306	Bldg. C	26 50 00	Feeder - 2500A, 120/208V, 3ph, 4w	10	LF	922.2	\$9,222
1307	Bldg. C	26 50 00	Feeder - 4000A, 120/208V, 3ph, 4w	10	LF	1,057.10	\$10,571
1308	Bldg. C	26 50 00	Feeder - 400A, 120/208V, 3ph, 4w	160	LF	118.27	\$18,923
1309	Bldg. C	26 50 00	Feeder - 500A, 120/208V, 3ph, 4w	100	LF	172.89	\$17,289
1310	Bldg. C	26 50 00	Feeder - 600A, 120/208V, 3ph, 4w	20	LF	200.49	\$4,010

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1			--- Base Estimate ---				\$ 151,670,428
1311	Bldg. C	26 50 00	Feeder - Bus Plug A- Fused- 175A	260	LF	45.55	\$11,844
1312	Bldg. C	26 50 00	Feeder - Bus Plug A- Fused- 225A	260	LF	52.23	\$13,579
1313	Bldg. C	26 50 00	Feeder - Legally Req Standby ATS (Size not shown)	410	EA	118.27	\$48,491
1314	Bldg. C	26 50 00	Feeder - Life Safety ATS 400a (Size not shown)	410	EA	118.27	\$48,491
1315	Bldg. C	26 50 00	Feeder - Optional Stanby ATS (Size not shown)	230	EA	118.27	\$27,202
1316	Bldg. C	26 50 00	Feeder - XFRM - 225A	20	EA	52.23	\$1,045
1317	Bldg. C	26 50 00	Feeder - XFRM - 400A	170	EA	118.27	\$20,106
1318	Bldg. C	26 50 00	Feeder - XFRM - 500A	100	EA	172.89	\$17,289
1319	Bldg. C	26 60 00	Util Service (EXIST): POC from Exsiting Util servce to New board: 1600A (480v)	1	LS	9,210.41	\$9,210
1320	Bldg. C	26 60 00	Util Service (EXIST): POC from Exsiting Util servce to New board: 4000A (480v)	2	LS	23,026.03	\$46,052
1321							
1322	Bldg. C		Re-feed Existing				\$37,993
1323	Bldg. C	26 00 00	Re-connect to Existing Bus-duct: Testing and re-torque	435.6	LF	87.22	\$37,993
1324							
1325	Bldg. C		D5030 - General Purpose Electrical Power				\$ 1,134,386
1326	Bldg. C		Branch Wiring System (Assembly)				\$ 97,325
1327	Bldg. C	26 00 00	Branch Wiring- Devices - Conduit-Wiring-Boxes	7,914.12	LF	8.8	\$69,671
1328	Bldg. C	26 00 00	Electrical Devices - User and Service (All Areas)	237.8	EA	116.29	\$27,654
1329	Bldg. C	26 00 00	Floor box - Combo std use - Steel (All Finished Areas)		EA	995.93	\$0
1330							
1331	Bldg. C		General Purpose Electrical Power Supplementary Components (Assembly)				\$1,037,061
1332	Bldg. C	26 00 00	HVAC- Plumb- VT and arch elements: Electrical power and POC only	594,510.00	SF	1.74	\$1,037,061
1333							
1334	Bldg. C		D5040 - Lighting				\$ 1,602,913
1335	Bldg. C		Branch Wiring for Lighting (Assembly)				\$516,930
1336	Bldg. C	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - EM CKT - Interior	33,700.00	LF	9.86	\$332,338
1337	Bldg. C	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - Interior	19,100.00	LF	8.8	\$168,145
1338	Bldg. C	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - per lf fixt Interior	300	LF	8.8	\$2,641
1339	Bldg. C	26 00 00	Branch Wiring- Lighting - Conduit-Wiring-Boxes - Plaza Exterior	1,400.00	LF	9.86	\$13,806
1340							
1341	Bldg. C		Lighting Control (Assembly)				\$502,683
1342	Bldg. C	26 00 00	Dimming Systems	1	LS	87,219.82	\$87,220
1343	Bldg. C	26 00 00	DMX - Controller (Seq TBD)	3	LS	11,629.31	\$34,888
1344	Bldg. C	26 00 00	Relay based Lighting Control system	594,510.00	SF	0.58	\$345,687
1345	Bldg. C	26 00 00	Software & Programming	1	LS	34,887.93	\$34,888
1346							
1347	Bldg. C		Lighting Fixtures (Assembly)				\$583,300
1348	Bldg. C	26 00 00	Exit Sign - 2 ckt with wiring - Amenities	8	EA	429.32	\$3,435
1349	Bldg. C	26 00 00	Exit Sign - 2 ckt with wiring - Back of House	55	EA	429.32	\$23,613
1350	Bldg. C	26 00 00	Exit Sign - 2 ckt with wiring - Circulation	2	EA	429.32	\$859
1351	Bldg. C	26 00 00	Exit Sign - 2 ckt with wiring - Lobbies	54	EA	429.35	\$23,185
1352	Bldg. C	26 00 00	Exit Sign - 2 ckt with wiring - Mart	22	EA	429.35	\$9,446
1353	Bldg. C	26 00 00	Exit Sign - 2 ckt with wiring - Office	10	EA	429.35	\$4,294
1354	Bldg. C	26 00 00	Exit Sign - 2 ckt with wiring - Retail	18	EA	429.35	\$7,728

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1			--- Base Estimate ---				\$ 151,670,428
1355	Bldg. C	26 00 00	LED Decorative Pendant - Ext walkway in render	0	EA	2,934.53	\$0
1356	Bldg. C	26 00 00	LED lensed strip - Back of House	122	EA	385.36	\$47,014
1357	Bldg. C	26 00 00	LED lensed strip - MEP Offices	125	EA	385.36	\$48,170
1358	Bldg. C	26 00 00	Shell - LED strip - (Part on EM Ckt) - Amenities	1,671.00	EA	210	\$350,910
1359	Bldg. C	26 00 00	Supports - fixtures: Grativy and Seismic	2,887.00	EA/LF	11.63	\$33,574
1360	Bldg. C	26 00 00	TI - Decorative Wall - Lobbies	7	EA	998.13	\$6,987
1361	Bldg. C	26 00 00	TI - LED Down/up light - Lobbies	14	EA	559.03	\$7,826
1362	Bldg. C	26 00 00	TI - LED Linear - Lobbies	147	LF	110.61	\$16,259
1363							
1364	Bldg. C		D5080 - Miscellaneous Electrical Systems				\$ 380,918
1365	Bldg. C		Miscellaneous Electrical Systems Supplementary Components (Assembly)				\$380,918
1366	Bldg. C	26 00 00	Demolition: Electrical specific demo: Safe-cut-cap; Crtical removal only	290	HR	110.48	\$32,039
1367	Bldg. C	26 00 00	Temp power and lighting during construction - phased	1	ALLOW	348,879.30	\$348,879
1368							
1369	Bldg. C		D60 - Low Voltage				\$ 950,846
1370	Bldg. C		D6010 - Data Communications				\$ 743,434
1371	Bldg. C		Data Communication Program and Integration Services (Assembly)				\$743,434
1372	Bldg. C	27 00 00	4" C.O. Riser	900	SF	57.84	\$52,060
1373	Bldg. C	27 00 00	New IT/IS (telte-data) Infrastructure (Vert. Core MDF/IDF's only)	594,510.00	SF	1.16	\$691,374
1374							
1375	Bldg. C		D6060 - Distributed Communications and Monitoring				\$ 207,412
1376	Bldg. C		Distributed Systems (Assembly)				\$207,412
1377	Bldg. C	27 00 00	DAS - Infrastructure and core services - Emergency services	594,510.00	SF	0.35	\$207,412
1378							
1379	Bldg. C		D70 - Security & Fire Alarm				\$ 1,417,317
1380	Bldg. C		D7010 - Access Control and Intrusion Detection				\$ 241,981
1381	Bldg. C		Intrusion Detection (Assembly)				\$241,981
1382	Bldg. C	28 00 00	New Security Infrastructure (Vert. & horiz. Core and main term.)	594,510.00	SF	0.41	\$241,981
1383							
1384	Bldg. C		D7050 - Detection and Alarm				\$ 1,175,336
1385	Bldg. C		Fire Detection and Alarm (Assembly)				\$ 1,175,336
1386	Bldg. C	28 00 00	Emergency DAS (Distributed Antennae system) as required by code	594,510.00	SF	0.47	\$276,550
1387	Bldg. C	28 00 00	Fire alarm system	594,510.00	SF	1.34	\$795,080
1388	Bldg. C	28 00 00	Smoke Control System (Part of FA and DDC)	594,510.00	SF	0.17	\$103,706
1389							
1390	Bldg. C		F - Special Construction & Demolition				\$ 730,917
1391	Bldg. C		F30 - Selective Interior Demolition				\$ 730,917
1392	Bldg. C		F3030 - Selective Demolition				\$ 730,917
1393	Bldg. C		Selective Building Demolition (Assembly)				\$411,517
1394	Bldg. C	02 40 00	Demo all exterior retail storefronts	1	LS	34,258.00	\$34,258
1395	Bldg. C	02 40 00	Demo existing escalators from Levels B1 - 2	1	LS	156,000.00	\$156,000
1396	Bldg. C	02 40 00	Remove all existing roofing	1	LS	181,779.00	\$181,779
1397	Bldg. C	02 40 00	Remove existing roofing at Olympic Parking Bridge	1	LS	11,000.00	\$11,000
1398	Bldg. C	02 40 00	Remove curtainwall at courtyard from Ground Floor to Level 2 only	1	LS	12,000.00	\$12,000

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1			--- Base Estimate ---				\$ 151,670,428
1399	Bldg. C	02 40 00	Remove Staircases at Escalators	1	LS	16,480.00	\$16,480
1401	Bldg. C		Selective Interior Demolition (Assembly)				\$319,400
1402	Bldg. C	02 40 00	Demo all existing concrete pads	1	LS	20,000.00	\$20,000
1403	Bldg. C	02 40 00	Demo all existing MEPF systems	1	LS	228,150.00	\$228,150
1404	Bldg. C	02 40 00	Demo all interior retail space and storefronts	1	LS	18,250.00	\$18,250
1405	Bldg. C	02 40 00	Trash Chute for Building C	1	LS	53,000.00	\$53,000
1406							
1407	Bldg. C		F - Add to Category above				\$ 504,662
1408	Bldg. C		F30 - Selective Interior Demolition				\$ 504,662
1409	Bldg. C		F3030 - Selective Demolition				\$ 504,662
1410							
1411	Bldg. C		Selective Building Demolition (Assembly)				\$504,662
1412	Bldg. C	02 40 00	Demo and Remove Existing Stairs from Courtyard to Bldg C at Grid 17c & 8c/9c	1	LS	25,000.00	\$25,000
1413	Bldg. C	02 40 00	Demo and Remove Existing Stairs from Ground floor to Level 3 at Grid 7c/8c & 18 - 17c	1	LS	25,000.00	\$25,000
1414	Bldg. C	02 40 00	Demo of Slab at Level 2 & 3 for new escalators	1	LS	12,000.00	\$12,000
1415	Bldg. C	02 40 00	Demo of Slab at Level 3 for new staircase	1	LS	20,000.00	\$20,000
1416	Bldg. C	02 40 00	Demo stairs, floor slab and structure for new ramp at exterior of Bldg C adjacent to Los Angeles St Parking Entrance	1	LS	50,000.00	\$50,000
1417	Bldg. C	02 40 00	Soft Demo of All Floors	1	LS	372,662.00	\$372,662
1418	Bldg. C		Z - General Requirements				\$ 797,934
1419	Bldg. C		Z10 - General Requirements				\$ 797,934
1420	Bldg. C		Z1050 - Temporary Facilities and Controls				\$ 797,934
1421	Bldg. C		(Unassigned)				\$ 797,934
1422							
1423	Bldg. C	01 74 16	General Requirements	1	LS	797,934.00	\$797,934
1424	Bldg. C						
1425	Bldg. C						
1426	Olympic Prkg		Olympic Parking				\$ 3,184,067
1427	Olympic Prkg		B - Shell				\$ 487,751
1428	Olympic Prkg		B10 - Superstructure				\$ 85,020
1429	Olympic Prkg		B1010 - Floor Construction				\$ 64,620
1430	Olympic Prkg		Columns Supporting Floor (Assembly)				\$64,620
1431	Olympic Prkg	03 30 00	CIP Concrete Repair Work	323,100.00	SF	0.2	\$64,620
1432							
1433	Olympic Prkg		B2080 - Exterior Wall Appurtenances				\$ 20,400
1434	Olympic Prkg		Interior Fixed Partitions (Assembly)				\$20,400
1435	Olympic Prkg	04 20 00	CMU barrier walls at elevator lobbies	1	LS	20,400.00	\$20,400
1436							
1437	Olympic Prkg		B20 - Exterior Enclosure				\$ 15,000
1438	Olympic Prkg		B2080 - Exterior Wall Appurtenances				\$ 15,000
1439	Olympic Prkg		Misc. Structural Items				\$15,000
1440	Olympic Prkg	05 50 00	Miscellaneous metals	1	LS	15,000.00	\$15,000
1441							
1442	Olympic Prkg		B30 - Roofing				\$ 387,731

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1443	Olympic Prkg		B3040 - Traffic Bearing Horizontal Enclosures				\$ 387,731
1444	Olympic Prkg		Flashing & Accessories				\$387,731
1445	Olympic Prkg	07 10 00	Elastomeric Coating on Roof	37,271.00	SF	6.85	\$255,306
1446	Olympic Prkg	07 10 00	Elastomeric Coating over Retail Area	19,332.00	SF	6.85	\$132,424
1447	Olympic Prkg		D - Services				\$ 1,867,809
1448	Olympic Prkg		D10 - Conveying				\$ 832,848
1449	Olympic Prkg		D1010 - Vertical Conveying Systems				\$ 832,848
1450	Olympic Prkg		Elevators (Assembly)				\$832,848
1451	Olympic Prkg	14 20 00	Parking Garage Elevators - Modernize Geared Traction w/ 3000 lb capacity, 350 fpm	3	EA	277,616.00	\$832,848
1452	Olympic Prkg		D20 - Plumbing				\$ 149,468
1453	Olympic Prkg		D2020 - Sanitary Drainage				\$ 15,193
1454	Olympic Prkg		Sanitary Sewer Piping (Assembly)				\$15,193
1455	Olympic Prkg	22 00 00	Sewage Ejector for Fire water overflow (per narrative)	1	EA	15,193.00	\$15,193
1456	Olympic Prkg		D2030 - Building Support Plumbing Systems				\$ 134,275
1457	Olympic Prkg		Stormwater Drainage Equipment (Assembly)				\$23,500
1458	Olympic Prkg	22 00 00	Sump pump for Emergency drains (per narrative)	1	EA	23,500.00	\$23,500
1459	Olympic Prkg		Stormwater Drainage Piping (Assembly)				\$110,775
1460	Olympic Prkg	22 00 00	New emergency drains (per narrative)	4	EA	7,500.00	\$30,000
1461	Olympic Prkg	22 00 00	Storm Drain piping - Reowrk existing (new pump and reroute)	323,100.00	SF	0.25	\$80,775
1462	Olympic Prkg		D30 - HVAC				\$ 68,000
1463	Olympic Prkg		D3070 - Special Purpose HVAC Systems				\$ 68,000
1464	Olympic Prkg		CO Monitoring				\$68,000
1465	Olympic Prkg	23 00 00	CO Detector - Basements (System headed, devices hard-pipe)	17.00	EA	4000	\$68,000
1466	Olympic Prkg		D40 - Fire Protection				\$ 75,000
1467	Olympic Prkg		D4010 - Fire Suppression				\$ 75,000
1468	Olympic Prkg		Water-Based Fire-Suppression (Assembly)				\$75,000
1469	Olympic Prkg	21 00 00	Fire Suppression System - Rework allowance	1	AL	75,000.00	\$75,000
1470	Olympic Prkg		D50 - Electrical				\$ 593,868
1471	Olympic Prkg		D5020 - Electrical Services & Distribution				\$ 593,868
1472	Olympic Prkg		Electrical Service & Distribution Supplementary Components (Assembly)				\$207,999
1473	Olympic Prkg	26 00 00	Emergency Call Stations	1	LS	125000	\$125,000
1474	Olympic Prkg	26 00 00	Power to Parking Control Equipment	83	EA	999.99	\$82,999
1475	Olympic Prkg		Electrical Service (Assembly)				\$75,000
1476	Olympic Prkg	26 00 00	Temporary Power	323,100.00	SF	0.23	\$75,000
1477	Olympic Prkg		Power Distribution (Assembly)				\$310,869

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1487	Olympic Prkg	26 00 00	LED (8') - For additional coverage (includes surface mounted conduit/wiring)	134.63	EA	676.99	\$91,144
1488	Olympic Prkg	26 00 00	Lighting Control modifications	1	LS	29,499.73	\$29,500
1489	Olympic Prkg	26 00 00	Replace existing light fixture with new LED (8') - one-for-one	403.88	EA	471	\$190,226
1490							
1491	Olympic Prkg		D70 - Security & Fire Alarm				\$ 148,625
1492	Olympic Prkg		D7030 - Electronic Surveillance				\$ 148,625
1493	Olympic Prkg		Video Surveillance (Assembly)				\$148,625
1494	Olympic Prkg	28 00 00	Video Surveillance	323,100.00	SF	0.46	\$148,625
1495							
1496	Olympic Prkg		E - Equipment & Furnishings				\$ 545,103
1497	Olympic Prkg		E10 - Equipment and Furniture				\$ 545,103
1498	Olympic Prkg		E1010 - Vehicle and Pedestrian Equipment				\$ 545,103
1499	Olympic Prkg		Interior Parking Control Equipment (Assembly)				\$545,103
1500	Olympic Prkg	11 10 00	Design, Implementation, Configuration, Training	1	LS	75,373.00	\$75,373
1501	Olympic Prkg	11 10 00	LPR with Bluetooth Phone Backup for Monthly Users to Activate Entry & Exit Gates (RFI 21)	6	EA	21,000.00	\$126,000
1502	Olympic Prkg	11 10 00	Master Software Agreement	12	MO	1,735.00	\$20,820
1503	Olympic Prkg	11 10 00	Provide a new pay-on-foot station at ground level serving retail (RFI 21)	1	EA	42,150.00	\$42,150
1504	Olympic Prkg	11 10 00	Provide a new pay-on-foot station at the parking structure side of the bridge connection to CMC (RFI 21)	1	EA	42,150.00	\$42,150
1505	Olympic Prkg	11 10 00	Provide a new pay-on-foot station at the valet pick up area (RFI 21)	1	EA	42,150.00	\$42,150
1506	Olympic Prkg	11 10 00	Provide barrier gate - non-illuminated with folding arm	6	EA	3,405.00	\$20,430
1507	Olympic Prkg	11 10 00	Provide equipment necessary for backup fee computer (RFI 21)	1	EA	10,900.00	\$10,900
1508	Olympic Prkg	11 10 00	Provide equipment necessary for operator personnel to view payment devices at the control lanes with appropriately placed cameras (RFI 21) Cameras to be BY BP- 17"	1	EA	7,455.00	\$7,455
1509	Olympic Prkg	11 10 00	Provide full intercom capabilities at all lanes (RFI 21)	6	EA	2,900.00	\$17,400
1510	Olympic Prkg	11 10 00	Provide hand-held valet integrated with the PARCS system (RFI 21)	1	EA	5,450.00	\$5,450
1511	Olympic Prkg	11 10 00	Provide infrastructure for power, data, phone line, servers, Wi-Fi and Internet (RFI 21)	1	LS	38,000.00	\$38,000
1512	Olympic Prkg	11 10 00	Provide locking cabinet, servers and monitors in the Parkinf Office as needed (RFI 21)	1	EA	6,825.00	\$6,825
1513	Olympic Prkg	11 10 00	Proximity card or HID for monthly users to activate entry & exit gates (RFI 21)	6	EA	15,000.00	\$90,000
1514							
1515	Olympic Prkg		F - Special Construction & Demolition				\$ 25,000
1516	Olympic Prkg		F30 - Selective Interior Demolition				\$ 25,000
1517	Olympic Prkg		F3030 - Selective Demolition				\$ 25,000
1518	Olympic Prkg		Selective Building Demolition (Assembly)				\$ 25,000
1519	Olympic Prkg	02 40 00	Remove existing roofing at Olympic Parking Bridge				
1520	Olympic Prkg	02 40 00	Removal of existing parking booths	1	AL	\$ 25,000	\$ 25,000
1521							

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1522	Olympic Prkg		G - Building Sitework				\$ 170,920
1523	Olympic Prkg		G20 - Site Improvements				\$ 170,920
1524	Olympic Prkg		G2020 - Parking Lots				\$ 94,420
1525	Olympic Prkg		Striping & Signs"				\$94,420
1526	Olympic Prkg	10 14 00	Parking Structure Traffic Signage	8	EA	2,500.00	\$20,000
1527	Olympic Prkg	32 10 00	Truncated Domes	518	LF	55	\$28,490
1528	Olympic Prkg	32 33 00	New Parking Stalls	1	LSUM	6,350.00	\$6,350
1529	Olympic Prkg	32 33 00	Remove existing marking - conflicting with new stalls	1	LSUM	39,580.00	\$39,580
1531	Olympic Prkg		G2060 - Site Development				\$ 76,500
1532	Olympic Prkg		Site Specialties (Assembly)				\$76,500
1533	Olympic Prkg	32 39 00	Metal Bollards - Parking Equipment	6	EA	1,500.00	\$9,000
1534	Olympic Prkg	32 39 00	Metal Bollards - Pedestrian Protection at Elevator Lobby - Option 1	45	EA	1,500.00	\$67,500
1536	Olympic Prkg		Z - General Requirements				\$ 87,484
1537	Olympic Prkg		Z10 - General Requirements				\$ 87,484
1538	Olympic Prkg		Z1050 - Temporary Facilities and Controls				\$ 87,484
1539	Olympic Prkg		(Unassigned)				\$87,484
1540	Olympic Prkg	01 74 16	General Requirements	1	LS	87,484.00	\$87,484
1541	Olympic Prkg						
1542	Olympic Prkg						
1543	Pavilion		Pavilion				\$ 6,140,628
1544	Pavilion		A - Substructure				\$ 177,734
1545	Pavilion		A20 - Basement Construction				\$ 177,734
1546	Pavilion		A2010 - Walls for Subgrade Enclosures				\$ 177,734
1547	Pavilion		Subgrade Enclosure Wall Construction (Assembly)				\$177,734
1548	Pavilion	03 20 00	Reinforcement - 20 LBS/SF (Includes Drill & Epoxy)	20,000.00	SF	4.5	\$90,000
1549	Pavilion	03 30 00	CIP Concrete - Assume 10% Waste	31.02	CY	375	\$11,632
1550	Pavilion	03 30 00	CIP Concrete - Finish	1,000.00	SF	3	\$3,000
1551	Pavilion	03 30 00	CIP Concrete - Place	31.02	CY	100	\$3,102
1552	Pavilion	03 30 00	Formwork	2,000.00	SF	35	\$70,000
1554	Pavilion		B - Shell				\$ 4,183,506
1555	Pavilion		B10 - Superstructure				\$ 3,040,542
1556	Pavilion		B1010 - Floor Construction				\$ 2,944,613
1557	Pavilion		Columns Supporting Floor (Assembly)				\$2,944,613
1558	Pavilion	03 30 00	CIP Concrete -PT Deck New Pavilion	5,287.00	SF	103	\$544,561
1559	Pavilion	03 30 00	CIP Concrete - Pavilion Wall at Stairs	3,090.00	SF	85	\$262,650
1560	Pavilion	03 30 00	CIP Concrete - Sack & Patch Pavilion Walls	5,000.00	SF	13	\$65,000
1561	Pavilion	03 30 00	Radial Concrete Walls	5,000.00	SF	\$29.22	\$146,083
1562	Pavilion	04 20 00	CMU walls at the basement level for elevator shafts,eq. room, pits	1	LS	375,500.00	\$375,500
1563	Pavilion	05 10 00	Structural Metal Framing - Restaurant Pavilion	65	TN	7,827.65	\$508,797
1564	Pavilion	05 10 00	Structural Metal Framing - Roof Penthouse (Assume 15 PSF)	4.58	TN	7,827.65	\$35,811

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1			--- Base Estimate ---				\$ 151,670,428
1565	Pavilion	05 50 00	Elevator Support Steel (Guiderails- Hoist Beams- Machine Beams)	4.12	TN	7,827.65	\$32,211
1566	Pavilion	05 50 00	Strengthen Existing Deck & Columns to Support New Pavilion - Deck & Column	44	EA	7,500.00	\$330,000
1567	Pavilion	05 50 00	Strengthen Existing Deck & Columns to Support New Pavilion - Beams	460	LF	1,400.00	\$644,000
1568							
1569	Pavilion		B1020 - Roof Construction				\$ 82,054
1570	Pavilion		Roof Decks				\$82,054
1571	Pavilion	03 30 00	Lightweight Concrete on Metal Deck - Pavilion Roof				
1572	Pavilion	05 30 00	Metal Deck - Pavilion Roof	8,230.00	SF	9.3	\$76,502
1573	Pavilion	05 30 00	Metal Deck - Penthouse Roof	366	SF	15.17	\$5,552
1574							
1575	Pavilion		B1080 - Stairs				\$ 13,875
1576	Pavilion		Stair Railings (Assembly)				\$13,875
1577	Pavilion	05 52 00	Metal Railings - SS Freestanding Handrail	48	LF	125	\$6,000
1578	Pavilion	05 52 00	Metal Railings - SS Handrail at Wall	105	LF	75	\$7,875
1579							
1580	Pavilion		B20 - Exterior Enclosure				\$ 1,098,864
1581	Pavilion		B2010 - Exterior Walls				\$ 1,054,164
1582	Pavilion		Fabricated Exterior Wall Assemblies (Assembly)				\$988,820
1583	Pavilion	08 44 00	Curtain Wall Framing System - Fixed Exterior Glazing System	2,520.00	SF	139.84	\$352,397
1584	Pavilion	08 44 00	Curtain Wall Framing System - Sliding Exterior Glazing System	2,217.00	SF	236.05	\$523,323
1585	Pavilion	08 44 00	Guardrail Glass at Pavilion	196	LF	425	\$83,300
1586	Pavilion	08 44 00	Metal Panel Screenwall	298	SF	100	\$29,800
1587							
1588	Pavilion		Metal Stud Framing				\$65,344
1589	Pavilion	09 20 00	Gypsum Board - 2HR Shaft 10'	1,280.00	SF	18.4	\$23,552
1590	Pavilion	09 20 00	Gypsum Board - Backing	2,400.00	SF	1.96	\$4,704
1591	Pavilion	09 20 00	Gypsum Board - Corner Beads/ Finished Ends	1	LS	4,000.00	\$4,000
1592	Pavilion	09 20 00	Gypsum Board - Furring 12'	1,908.00	SF	8.54	\$16,294
1593	Pavilion	09 20 00	Gypsum Board - HMF	12	EA	105	\$1,260
1594	Pavilion	09 20 00	Gypsum Board - NR Wall 10'	330	SF	10.8	\$3,564
1595	Pavilion	09 20 00	Gypsum Board Ceilings	1,000.00	SF	11.97	\$11,970
1596							
1597	Pavilion		B2050 - Exterior Doors and Grilles				\$ 44,700
1598	Pavilion		Exterior Entrance Doors (Assembly)				\$7,500
1599	Pavilion	08 42 26	All-Glass Entrance	1	EA	7,500.00	\$7,500
1600							
1601	Pavilion		Frames				\$37,200
1602	Pavilion	08 11 00	BOH_double doors	4	EA	5,800.00	\$23,200
1603	Pavilion	08 11 00	BOH_single doors	3	EA	3,000.00	\$9,000
1604	Pavilion	08 11 00	Single interior doors	2	EA	2,500.00	\$5,000
1605							
1606	Pavilion		B30 - Roofing				\$ 44,100
1607	Pavilion		B3010 - Roofing				\$ 7,500
1608	Pavilion		Flashing & Accessories				\$7,500
1609	Pavilion	07 55 00	Protected Membrane Roofing - PVC Roof Over Dens Deck - Penthouse	375	SF	20	\$7,500
1610							
1611	Pavilion		B3040 - Traffic Bearing Horizontal Enclosures				\$ 36,600
1612	Pavilion		Flashing & Accessories				\$36,600

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1			--- Base Estimate ---				\$ 151,670,428
1613	Pavilion	07 10 00	Waterproofing/Paver system at green roof over restaurant in Pavilion	1	LS	36,600.00	\$36,600
1614							
1615	Pavilion		C - Interiors				\$ 78,634
1616	Pavilion		C10 - Interior Construction				\$ 53,634
1617	Pavilion		C1010 - Partitions				\$ 53,634
1618	Pavilion		Metal Stud Framing				\$53,634
1619	Pavilion	09 20 00	Gypsum Board - 2HR Shaft 12'	912	SF	18.43	\$16,808
1620	Pavilion	09 20 00	Gypsum Board - NR Wall 12'	3,360.00	SF	10.96	\$36,826
1621							
1622	Pavilion		C20 - Interior Finishes				\$ 25,000
1623	Pavilion		C2010 - Wall Finishes				\$ 25,000
1624	Pavilion		Wall Painting and Coating (Assembly)				\$25,000
1625	Pavilion	09 75 00	Interior Paint - Walls & ceilings	1	AL	25,000.00	\$25,000
1626							
1627	Pavilion		C2030 - Flooring				\$ -
1628	Pavilion		Tile Flooring				
1629	Pavilion	09 30 00	Tile Flooring in Passenger Elevator Cabs				
1630							
1631	Pavilion		D - Services				\$ 1,142,787
1632	Pavilion		D10 - Conveying				\$ 601,455
1633	Pavilion		D1010 - Vertical Conveying Systems				\$ 601,455
1634	Pavilion		Elevators (Assembly)				\$601,455
1635	Pavilion	14 20 00	New MRL Elevator w/ 2500 lb capacity and 200 fpm - 3-stops (B,G and L2)	1	EA	297,837.00	\$297,837
1636	Pavilion	14 20 00	New MRL Elevator w/ 4500 lb capacity and 200 fpm - 5-stops (B3, B2, B1, G, and L2)	1	EA	302,418.00	\$302,418
1637	Pavilion	09 30 00	Tile Flooring in Passenger Elevator Cabs	40	SF	30	\$1,200
1638							
1639	Pavilion		D20 - Plumbing				\$ 131,835
1640	Pavilion		D2010 - Domestic Water Distribution				\$ 36,490
1641	Pavilion		Domestic Water Piping (Assembly)				\$9,835
1642	Pavilion	22 00 00	2" CW - POC	1	LS	5,000.00	\$5,000
1643	Pavilion	22 00 00	2" CW to Prop line	70	LF	40.5	\$2,835
1644	Pavilion	22 00 00	Domestic Water Distribution (Add where new & misc rework existing at new connections) - CU=vert; PEX=horiz	1	LS	2,000.00	\$2,000
1645							
1646	Pavilion		Plumbing Fixtures (Assembly)				\$26,655
1647	Pavilion	22 00 00	Fixture: Drain Rough-in to existing	3	EA	615	\$1,845
1648	Pavilion	22 00 00	Fixture: Rough-in to existing Wet-Stacks (Including all Horizontal	8	EA	939	\$7,512
1649	Pavilion	22 00 00	Floor Drains	2	EA	487.5	\$975
1650	Pavilion	22 00 00	Lavatory	4	EA	1,877.50	\$7,510
1651	Pavilion	22 00 00	Roof Receptor	1	EA	648	\$648
1652	Pavilion	22 00 00	Urinal	1	EA	1,715.00	\$1,715
1653	Pavilion	22 00 00	Water Closet	3	EA	2,150.00	\$6,450
1654							
1655	Pavilion		D2020 - Sanitary Drainage				\$ 42,600
1656	Pavilion		Sanitary Drainage Supplementary Components (Assembly)				\$23,050
1657	Pavilion	22 00 00	Grease Interceptor - 2-000gal (System & Core piping)	1	LS	23,050.00	\$23,050
1658							

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1659	Pavilion		Sanitary Sewer Piping (Assembly)				\$19,550
1660	Pavilion	22 00 00	4" SS - POC	1	AL	10,000.00	\$10,000
1661	Pavilion	22 00 00	4" SS to Prop line	70	LF	65	\$4,550
1662	Pavilion	22 00 00	Sanitary Drainage (Misc)	1	AL	5,000.00	\$5,000
1663							
1664	Pavilion		D2030 - Building Support Plumbing Systems				\$ 21,195
1665	Pavilion		Stormwater Drainage Piping (Assembly)				\$21,195
1666	Pavilion	22 00 00	Roof/OF Drain Assembly	15	EA	475	\$7,125
1667	Pavilion	22 00 00	Storm Water: System/leaders	4,690.00	SF	3	\$14,070
1668							
1669	Pavilion		D2060 - Process Support Plumbing Systems				\$ 31,550
1670	Pavilion		Gas Systems (Assembly)				\$31,550
1671	Pavilion	22 00 00	MECH: Gas: HHW Boiler	3	EA	3,850.00	\$11,550
1672	Pavilion	22 00 00	Natural Gas - New Feed/Stub - from Existing point in B1	1	AL	20,000.00	\$20,000
1673							
1674	Pavilion		D30 - HVAC				\$ 229,662
1675	Pavilion		D3030 - Cooling Systems				\$ 229,662
1676	Pavilion		Central Cooling (Assembly)				\$112,000
1677	Pavilion	23 00 00	Kitchen Exhaust Fan (KEF)	10,000.00	CFM	2.95	\$29,500
1678	Pavilion	23 00 00	MUA Unit (MAU)	10,000.00	CFM	8.25	\$82,500
1679	Pavilion		Cooling System Supplementary Components (Assembly)				\$3,312
1680	Pavilion	23 00 00	Test and Balance	1.00	ALLOW	2000	\$2,000
1681	Pavilion	23 00 00	Safe-off	16.00	HR	82	\$1,312
1682	Pavilion	23 00 00	DDC Controls from Div 25 00 00				\$10,000
1683	Pavilion	23 00 00	DDC Controls - Headed and allowance	1.00	ALLOW	10000	\$10,000
1684	Pavilion		Facility Hydronic Distribution (Assembly)				\$35,420
1685	Pavilion	23 00 00	4" Piping	550.00	LF	64.4	\$35,420
1686	Pavilion		Supply Air (Assembly)				\$68,930
1687	Pavilion	23 00 00	Ductwork: 36x24	3,124.58	Lbs.	9.75	\$30,465
1688	Pavilion	23 00 00	Ductwork: 24o	1,742.75	Lbs.	9.75	\$16,992
1689	Pavilion	23 00 00	Ductwork: 10o	46.87	Lbs.	9.75	\$457
1690	Pavilion	23 00 00	STR - Stack through Roof	3.00	EA	2195	\$6,585
1691	Pavilion	23 00 00	Insulation: Dry	1,562.29	SF	2.09	\$3,265
1692	Pavilion	23 00 00	Insulation: Wet	550.00	SF	13	\$7,150
1693	Pavilion	23 00 00	Dampers (all)	3.00	EA	1338.75	\$4,016
1694							
1695	Pavilion		D40 - Fire Protection				\$ 41,020
1696	Pavilion		D4010 - Fire Suppression				\$ 41,020
1697	Pavilion		Water-Based Fire-Suppression (Assembly)				\$41,020
1698	Pavilion	21 00 00	Fire Suppression System	4,690.00	SF	8	\$37,520
1699	Pavilion	21 00 00	New 4" Lateral feed from Building B - Includes BFP and valves	70	LF	50	\$3,500
1700							
1701	Pavilion		D50 - Electrical				\$ 135,961
1702	Pavilion		D5010 - Facility Power Generation				\$ 840
1703	Pavilion		Battery Equipment (Assembly)				\$840
1704	Pavilion	26 00 00	Emerg. Inverter / batteries	4,690.00	SF	0.18	\$840
1705							

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1			--- Base Estimate ---				\$ 151,670,428
1706	Pavilion		D5020 - Electrical Services & Distribution				\$ 11,638
1707	Pavilion		Electrical Service (Assembly)				\$8,951
1708	Pavilion	26 00 00	Electrical Services & Distribution	1	LS	8,951.45	\$8,951
1709	Pavilion		Facility Grounding (Assembly)				\$168
1710	Pavilion	26 00 00	Ground / Bond upgrades: Core	4,690.00	SF	0.04	\$168
1711	Pavilion		Power Distribution (Assembly)				\$2,519
1712	Pavilion	26 00 00	Feeders	4,690.00	SF	0.54	\$2,519
1714	Pavilion		D5030 - General Purpose Electrical Power				\$ 115,386
1715	Pavilion		Branch Wiring System (Assembly)				\$386
1716	Pavilion	26 00 00	General Purpose Electrical Power	4,690.00	SF	0.08	\$386
1717	Pavilion		General Purpose Electrical Power Supplementary Components (Assembly)				\$115,000
1718	Pavilion	26 00 00	HVAC- Plumb- arch elements: Electrical power and POC only	1	LS	115,000.00	\$115,000
1720	Pavilion		D5040 - Lighting				\$ 5,139
1721	Pavilion		Branch Wiring for Lighting (Assembly)				\$521
1722	Pavilion	26 00 00	Lighting: Branch Wiring	4,690.00	SF	0.11	\$521
1723	Pavilion		Lighting Control (Assembly)				\$420
1724	Pavilion	26 00 00	Lighting Control: New Building Wide core system	4,690.00	SF	0.09	\$420
1725	Pavilion		Lighting Fixtures (Assembly)				\$4,198
1726	Pavilion	26 00 00	Light Fixtures: Core- Exterior and Code min	4,690.00	SF	0.9	\$4,198
1728	Pavilion		D5080 - Miscellaneous Electrical Systems				\$ 2,958
1729	Pavilion		Miscellaneous Electrical Systems Supplementary Components (Assembly)				\$2,958
1730	Pavilion	26 00 00	Demolition: Electrical specific demo existing bldg: Safe-cut-cap	16	HR	17.01	\$272
1731	Pavilion	26 00 00	Temp power and lighting during construction - phased	1	ALLOW	2,685.43	\$2,685
1733	Pavilion		D60 - Low Voltage				\$ 1,259
1734	Pavilion		D6010 - Data Communications				\$ 1,259
1735	Pavilion		Data Communication Program and Integration Services (Assembly)				\$1,259
1736	Pavilion	27 00 00	New IT/IS (telte-data) Infrastructure (Vert. & horiz. Core MDF/IDF's only)	4,690.00	SF	0.27	\$1,259
1738	Pavilion		D70 - Security & Fire Alarm				\$ 1,595
1739	Pavilion		D7010 - Access Control and Intrusion Detection				\$ 336
1740	Pavilion		Intrusion Detection (Assembly)				\$336
1741	Pavilion	28 00 00	New Security Infrastructure (Vert. & horiz. Core and main term.)	4,690.00	SF	0.07	\$336
1743	Pavilion		D7050 - Detection and Alarm				\$ 1,259
1744	Pavilion		Fire Detection and Alarm (Assembly)				\$1,259
1745	Pavilion	28 00 00	Fire alarm: system new: Sprinkler Monitoring and Core code min	4,690.00	SF	0.27	\$1,259
1747	Pavilion		F - Special Construction & Demolition				\$ 55,834
1748	Pavilion		F30 - Selective Interior Demolition				\$ 55,834
1749	Pavilion		F3010 - Structure Demolition				\$ 55,834
1750	Pavilion		Building Demolition (Assembly)				\$55,834

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1751	Pavilion	02 40 00	Removal and Disposal - Existing Pavilion (PAD) Building	1	LS	34,334.21	\$34,334
1752	Pavilion	02 40 00	Demo Basement CMU Walls Between Grid 1-3 / C -G & Associated MEP	1	LS	14,000.00	\$14,000
1753	Pavilion	02 40 00	Demo floor deck at Basement Levels B1 and B2 as required for installation of new vertical transportation for new Pavilion building	1	LS	7,500.00	\$7,500
1754							
1755	Pavilion		G - Building Sitework				\$ 402,721
1756	Pavilion		G10 - Site Preparation				\$ 239,754
1757	Pavilion		G1030 - Site Element Relocations				\$ 239,754
1758	Pavilion		Site Element Relocations (Assembly)				\$239,754
1759	Pavilion	02 40 00	Demo existing Bank building at Pavilion location	1	LS	189,754.00	\$189,754
1760	Pavilion	02 50 00	Shoring Allowance before Demolition at the Pavilion	1	LS	50,000.00	\$50,000
1761							
1762	Pavilion		G20 - Site Improvements				\$ 162,967
1763	Pavilion		G2030 - Pedestrian Plazas and Walkways				\$ 102,392
1764	Pavilion		Exterior Steps and Ramps (Assembly)				\$102,392
1765	Pavilion	32 10 00	CIP Seatwalls - Natural Gray - Topcast Finish- Reinforced with #4 @ 12" OCEF	394	LF	120.57	\$47,504
1766	Pavilion	32 10 00	EPS 15 Foam Fill at Stairs and Seatwalls	4,539.00	SF	12.09	\$54,889
1767							
1768	Pavilion		G2080 - Landscaping				\$ 60,575
1769	Pavilion		Landscaping Activities (Assembly)				\$1,216
1770	Pavilion	32 91 00	Landscaping Preparation	4,287.00	SF	0.28	\$1,216
1771							
1772	Pavilion		Planting Irrigation (Assembly)				\$12,643
1773	Pavilion	32 84 00	Irrigation - Pavilion Roof	4,037.00	SF	2.64	\$10,662
1774	Pavilion	32 84 00	Irrigation - Pavilion Seating	250	SF	7.92	\$1,981
1775							
1776	Pavilion		Plants (Assembly)				\$21,128
1777	Pavilion	32 90 00	Planting Along Pavilion Seating - Allowance	10	EA	2,112.79	\$21,128
1778							
1779	Pavilion		Turf and Grasses (Assembly)				\$25,588
1780	Pavilion	32 90 00	Turf - Pavilion Roof	4,037.00	SF	6.34	\$25,588
1781							
1782	Pavilion		Z - General Requirements				\$ 99,412
1783	Pavilion		Z10 - General Requirements				\$ 99,412
1784	Pavilion		Z1050 - Temporary Facilities and Controls				\$ 99,412
1785	Pavilion		(Unassigned)				\$99,412
1786	Pavilion	01 74 16	General Requirements	1	LS	99,412.00	\$99,412
1787	Pavilion						
1788	Pavilion						
1789	Site		Site				\$ 5,889,256
1790	Site		B - Shell				\$ 1,125,519
1791	Site		B10 - Superstructure				\$ 587,344
1792	Site		B1010 - Floor Construction				\$ 500,000
1793	Site		Misc. Structural Items				\$500,000
1794	Site	03 30 00	CIP Concrete Structure at Grand Stair	1	LS	500,000.00	\$500,000
1795	Site	03 30 00	CIP topping slab as sub base for decorative concrete_5" sloped		SF	10	\$0
1796							
1797	Site		B1080 - Stairs				\$ 87,344
1798	Site		Stair Railings (Assembly)				\$87,344

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1799	Site	05 52 00	Metal Railings	698.75	LF	125	\$87,344
1800							
1801	Site		B30 - Roofing				\$ 538,175
1802	Site		B3040 - Traffic Bearing Horizontal Enclosures				\$ 538,175
1803	Site		Flashing & Accessories				\$538,175
1804	Site	07 10 00	Horizontal Waterproofing Membrane	56,650.00	SF	7	\$396,550
1805	Site	07 10 00	Prep Exiting Deck for Waterproofing Membrane	56,650.00	SF	2.5	\$141,625
1806							
1807	Site		G - Building Sitework				\$ 4,614,448
1808	Site		G10 - Site Preparation				\$ 131,685
1809	Site		G1030 - Site Element Relocations				\$ 131,685
1810	Site		Site Element Relocations (Assembly)				\$131,685
1811	Site	02 40 00	Demo Existing Paving at Plaza	1	LS	131,685.00	\$131,685
1812							
1813	Site		G20 - Site Improvements				\$ 4,125,554
1814	Site		G2030 - Pedestrian Plazas and Walkways				\$ 3,676,650
1815	Site		Exterior Steps and Ramps (Assembly)				\$ 699,800
1816	Site	32 13 00	PAV 02 - 4" Thick - Charcoal Integral Color - Topcast 03 Finish - #4 @ 18" OCEW - Dowels at 1.5' OC - 4' Sawcut Gri	108	LF	245.09	\$26,470
1817	Site	32 13 00	Plinth at Grand Stair - 1' Tall x 4' Wide - White Cement - Topcast 03 Finish - #4 @ 18" OCEW - Dowels at 1' OC into sloped structural deck - 4' Sawcuts O	152	LF	940	\$142,880
1818	Site	32 13 00	Stairs at Grand Stair - 4" Thick - White Cement - Topcast 03 Finish - #4 @ 18" OCEW - Dowels at 1' OC into sloped structural deck - 4' Sawcuts O	352	LF	280	\$98,560
1819	Site	08 43 00	Guardrail at Feature Stair	313.3	LF	500	\$ 156,650
1820	Site	14 31 00	Escalator - Feature Stair	2	EA	137,620.00	\$275,240
1821							
1822	Site		Pedestrian Pavement (Assembly)				\$2,676,850
1823	Site	32 13 00	12" Wide Banding - Pedestrian Paving - 4" Thick - Charcoal Integral Color-Topcast 03 Finish- #4 @ 18" OCEW - Dowels at 1.5' OC - 4'x6' Sawcut Gri	8,065.00	SF	36	\$290,340
1824	Site	32 13 00	1' - 10" Seat Walls	165	LF	200	\$33,000
1825	Site	32 13 00	1' - 10" Tall Planter Walls	39	LF	200	\$7,800
1826	Site	32 13 00	3' - 4" Seat Walls	141	LF	300	\$42,300
1827	Site	32 13 00	3' - 4" Tall Planter Walls	22	LF	300	\$6,600
1828	Site	32 13 00	3' - 8" Tall Planter Walls	268	LF	300	\$80,400
1829	Site	32 13 00	4' - 10" Seat Walls	68	LF	350	\$23,800
1830	Site	32 13 00	4' - 10" Tall Planter Walls	33	LF	350	\$11,550
1831	Site	32 13 00	48" Wide Banding - Pedestrian Paving - 4" Thick - White Cement - 3/8"- 3/4" Seeded Aggregate - #4 @ 18" OCEW - Dowels at 1.5' OC - 4'x6' Sawcut Gri	31,130.00	SF	42	\$1,307,460
1832	Site	32 17 00	Mounded planting area with integrated concrete seat walls at the Pavilion; including attachment of these seat walls to the structural slab below	5,324.00	SF	150	\$798,600
1833	Site	32 17 00	Exterior Signage Allowance	1.00	AL	75,000	\$75,000

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1835	Site		Plaza and Walkway Lighting (Assembly)				\$300,000
1836	Site	26 56 33	Interior Street & Courtyard Exterior Lighting & Power	1	AL	250,000.00	\$250,000
1837	Site	26 56 33	Landscape Lighting Allowance	1	AL	50,000.00	\$50,000
1839	Site		G2080 - Landscaping				\$ 448,904
1840	Site		Plants (Assembly)				\$448,904
1841	Site	32 90 00	1 Gallon Shrubs at 18" on center - Allowance	1,500.00	EA	22	\$33,000
1842	Site	32 90 00	15 Gallon Shrubs at 48" on center - Allowance	106	EA	150	\$15,900
1843	Site	32 90 00	24"-36" Deep Lightweight Import Soil Allowance	1,014.00	SF	165	\$167,310
1844	Site	32 90 00	365 Day Post Installation Maintenance	1	LS	33,000.00	\$33,000
1845	Site	32 90 00	48" Box Trees	14	EA	2,500.00	\$35,000
1846	Site	32 90 00	5 Gallon Shrubs at 30" on center - Allowance	540	EA	32	\$17,280
1847	Site	32 90 00	60" Box Trees	2	EA	3,800.00	\$7,600
1848	Site	32 90 00	84" Box Tree	1	EA	45,500.00	\$45,500
1849	Site	32 90 00	Bark Mulch - 2" Depth	7,350.00	SF	0.85	\$6,248
1850	Site	32 90 00	Fine Grading	73,056.00	SF	0.3	\$21,917
1851	Site	32 90 00	Irrigation (Allowance) Bubblers @ Trees & Drip @ Shrubs	7,350.00	SF	9	\$66,150
1853	Site		G30 - Site Mechanical Utilities				\$ 107,209
1854	Site		G3030 - Storm Drainage Utilities				\$ 107,209
1855	Site		Storm Drainage Utility Connection (Assembly)				\$107,209
1856	Site	2210100	Storm Drainage - New Interior Street	1	AL	75,000.00	\$75,000
1857	Site	2210100	Storm Drainage - Repair Existing	1	AL	15,000.00	\$15,000
1858	Site	22 00 00	COURTYARD: New Area Drain	18	EA	548.2	\$9,868
1859	Site	22 00 00	COURTYARD: New Planter Drain	15	EA	356.33	\$5,345
1860	Site	22 00 00	COURTYARD: Replace existing Area Drain Hardware	12	EA	166.37	\$1,996
1862	Site		G40 - Site Electrical Utilities				\$ 250,000
1863	Site		G4010 - Site Electric Distribution Systems				\$ 250,000
1864	Site		Electrical Utility Services (Assembly)				\$250,000
1865	Site	33 70 00	Coordination only with Utility on new Mains / Meter sections	4	AL	15,000.00	\$60,000
1866	Site	33 70 00	Portable Event Power	1	AL	150,000.00	\$150,000
1867	Site	33 70 00	Misc. Electrical & Distribution	1	AL	40,000.00	\$40,000
1869	Site		Z - General Requirements				\$ 149,289
1870	Site		Z10 - General Requirements				\$ 149,289
1871	Site		Z1050 - Temporary Facilities and Controls				\$ 149,289
1872	Site		(Unassigned)				\$149,289
1873	Site	01 74 16	General Requirements	1	LS	149,288.76	\$149,289
1874	Site						
1875	Site						
1876	Sub Prkg		Subterranean Parking				\$ 4,233,453
1877	Sub Prkg		B - Shell				\$ 220,179
1878	Sub Prkg		B10 - Superstructure				\$ 110,129
1879	Sub Prkg		B1010 - Floor Construction				\$ 110,129
1880	Sub Prkg		Columns Supporting Floor (Assembly)				\$110,129
1881	Sub Prkg	03 30 00	CIP Concrete - Patch Slab for Added Drainage	10,089.00	SF	2.5	\$25,223
1882	Sub Prkg	03 30 00	CIP Concrete Repair Work	424,530.00	SF	0.2	\$84,906

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1884	Sub Prkg		B2080 - Exterior Wall Appurtenances				\$ -
1885	Sub Prkg		Interior Fixed Partitions (Assembly)				
1886	Sub Prkg	04 20 00	CMU walls at the basement level for elevator shafts,eq. room, pits				
1887	Sub Prkg		B20 - Exterior Enclosure				\$ 110,050
1889	Sub Prkg		B2070 - Exterior Louvers and Vents				\$ 5,000
1890	Sub Prkg		Frames				\$5,000
1891	Sub Prkg	08 11 00	Single Doors at new machine room	2	EA	2,500.00	\$5,000
1893	Sub Prkg		B2080 - Exterior Wall Appurtenances				\$ 105,050
1894	Sub Prkg		Misc. Structural Items				\$105,050
1895	Sub Prkg	05 50 00	Miscellaneous metals	1	LS	105,050.00	\$105,050
1897	Sub Prkg		D - Services				\$ 3,172,837
1898	Sub Prkg		D20 - Plumbing				\$ 222,400
1899	Sub Prkg		D2020 - Sanitary Drainage				\$ 96,194
1900	Sub Prkg		Sanitary Sewer Piping (Assembly)				\$96,194
1901	Sub Prkg	22 00 00	Sanitary Drainage - Rework piping and infrastructure	1	LS	96,193.77	\$96,194
1903	Sub Prkg		D2030 - Building Support Plumbing Systems				\$ 126,206
1904	Sub Prkg		Stormwater Drainage Equipment (Assembly)				\$49,251
1905	Sub Prkg	22 00 00	Sump pump for Emergency drains (per narrative)	2	EA	24,625.61	\$49,251
1906	Sub Prkg		Stormwater Drainage Piping (Assembly)				\$76,955
1907	Sub Prkg	22 00 00	New emergency drains (per narrative)	8	EA	9,619.38	\$76,955
1909	Sub Prkg		D30 - HVAC				\$ 1,596,383
1910	Sub Prkg		D3060 - Ventilation				\$ 1,596,383
1911	Sub Prkg		CO Monitoring				\$237,420
1912	Sub Prkg	23 00 00	Test and Balance	1	ALLOW	7500	\$7,500
1913	Sub Prkg	23 00 00	Safe-off and Specific GEA removal	60	HR	82	\$4,920
1914	Sub Prkg	23 00 00	CO Detector - Basements (System headed, devices hard-pipe)	90.00	EA	2500	\$225,000
1915	Sub Prkg		Exhaust Air (Assembly)				\$1,013,500
1916	Sub Prkg	23 00 00	Garage Exhaust Fan (GEF) (Including mod/adaptation	350,000.00	CFM	2.81	\$983,500
1917	Sub Prkg	23 00 00	VFD: Fan	2.00	EA	15000	\$30,000
1918	Sub Prkg		Supply Air (Assembly)				\$345,463
1919	Sub Prkg	23 00 00	EA Ductwork: 48x12	8,584.85	Lbs.	9.75	\$83,702
1920	Sub Prkg	23 00 00	EA Ductwork: 30x10	10,827.74	Lbs.	9.75	\$105,570
1921	Sub Prkg	23 00 00	EA Ductwork: 30x8	5,437.07	Lbs.	9.75	\$53,011
1922	Sub Prkg	23 00 00	Ductwork: 24o	1,742.75	Lbs.	9.75	\$16,992
1923	Sub Prkg	23 00 00	Ductwork: 10o	46.87	Lbs.	9.75	\$457
1924	Sub Prkg	23 00 00	Dampers (all)	3.00	EA	1338.75	\$4,016
1925	Sub Prkg	23 00 00	EA Grilles and Trans box	42.00	EA	287.5	\$12,075
1926	Sub Prkg	23 00 00	Register: Raise existing CO Exhaust for clearance	84.00	EA	401	\$33,684
1927	Sub Prkg	23 00 00	Connect to EA Duct to Existing	9.00	EA	3995	\$35,955
1929	Sub Prkg		D40 - Fire Protection				\$ 392,190
1930	Sub Prkg		D4010 - Fire Suppression				\$ 392,190
1931	Sub Prkg		Water-Based Fire-Suppression (Assembly)				\$392,190

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#	Location	MasterFormat Code	Item Description	Takeoff Qty	UoM	Total \$/Unit	Grand Total
1			--- Base Estimate ---				\$ 151,670,428
1932	Sub Prkg	21 00 00	Fire Suppression System - Rework allowance	392,190.00	SF	1	\$392,190
1934	Sub Prkg		D50 - Electrical				\$ 629,679
1935	Sub Prkg		D5020 - Electrical Services & Distribution				\$ 528,799
1936	Sub Prkg		Electrical Service (Assembly)				\$137,267
1937	Sub Prkg	26 00 00	Temporary Power (including recircuit of existing during construction)	392,190.00	SF	0.35	\$137,267
1939	Sub Prkg		Power Distribution (Assembly)				\$391,532
1940	Sub Prkg	26 00 00	LED (8') - For additional coverage (includes surface mounted conduit/wiring)	163.41	EA	677	\$110,629
1941	Sub Prkg	26 00 00	Lighting Control modifications	1	LS	50,000.00	\$50,000
1942	Sub Prkg	26 00 00	Replace existing light fixture with new LED (8') - one-for-one	490.24	EA	471	\$230,903
1944	Sub Prkg		D5030 - General Purpose Electrical Power				\$ 100,880
1945	Sub Prkg		General Purpose Electrical Power Supplementary Components (Assembly)				\$100,880
1946	Sub Prkg	26 00 00	Power to Parking Control Equipment (Includes allowance for comm. conduits)	100.88	EA	1,000.00	\$100,880
1948	Sub Prkg		D70 - Security & Fire Alarm				\$ 332,185
1949	Sub Prkg		D7030 - Electronic Surveillance				\$ 332,185
1950	Sub Prkg		Video Surveillance (Assembly)				\$332,185
1951	Sub Prkg	28 00 00	Video Surveillance	392,190.00	SF	0.46	\$180,407
1952	Sub Prkg	28 00 00	Emergency Call Stations	1.00	LS	151,778	\$151,778
1954	Sub Prkg		E - Equipment & Furnishings				\$ 523,845
1955	Sub Prkg		E10 - Equipment and Furniture				\$ 523,845
1956	Sub Prkg		E1010 - Vehicle and Pedestrian Equipment				\$ 523,845
1957	Sub Prkg		Interior Parking Control Equipment (Assembly)				\$523,845
1958	Sub Prkg	11 10 00	Design, Implementation, Configuration, Training	1	LS	96,700.00	\$96,700
1959	Sub Prkg	11 10 00	LPR with Bluetooth Phone Backup for Monthly Users to Activate Entry & Exit Gates (RFI 21)	8	EA	21,000.00	\$168,000
1960	Sub Prkg	11 10 00	Master Software Agreement	12	MO	2,400.00	\$28,800
1961	Sub Prkg	11 10 00	Provide barrier gate - non-illuminated with folding arm	8	EA	3,405.00	\$27,240
1962	Sub Prkg	11 10 00	Provide equipment necessary for backup fee computer (RFI 21)	1	EA	7,455.00	\$7,455
1963	Sub Prkg	11 10 00	Provide full intercom capabilities at all lanes (RFI 21)	8	EA	2,900.00	\$23,200
1964	Sub Prkg	11 10 00	Provide hand-held valet integrated with the PARCS system (RFI 21)	1	EA	5,450.00	\$5,450
1965	Sub Prkg	11 10 00	Provide infrastructure for power, data, phone line, servers, Wi-Fi and Internet (RFI 21)	1	LS	47,000.00	\$47,000
1966	Sub Prkg	11 10 00	Proximity card or HID for monthly users to activate entry & exit gates (RFI 21)	8	EA	15,000.00	\$120,000
1968	Sub Prkg		F - Special Construction & Demolition				\$ 35,000
1969	Sub Prkg		F30 - Selective Interior Demolition				\$ 35,000
1970	Sub Prkg		F3030 - Selective Demolition				\$ 35,000
1971	Sub Prkg		Selective Building Demolition (Assembly)				\$35,000
1972	Sub Prkg	02 40 00	Demo Basement CMU Walls Between Grid 1-3 / C-G & Associated MEP				

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1			--- Base Estimate ---				\$ 151,670,428
1973	Sub Prkg	02 40 00	Demo floor deck at Basement Levels B1 and B2 as required for installation of new vertical transporation for new Pavilion building				
1974	Sub Prkg	02 40 00	Demo of existing Garage Exhaust Fan at Basement Level B3	1	LS	5,000.00	\$5,000
1975	Sub Prkg	02 40 00	Demo stair going from Basement Level B1 to Ground 1 and all associated utilities at Grid F / 1	1	LS	5,000.00	\$5,000
1976	Sub Prkg	02 40 00	Removal of existing parking booths	1	AL	25,000.00	\$25,000
1977							
1978	Sub Prkg		G - Building Sitework				\$ 179,015
1979	Sub Prkg		G20 - Site Improvements				\$ 179,015
1980	Sub Prkg		G2020 - Parking Lots				\$ 179,015
1981	Sub Prkg		Striping & Signs"				\$179,015
1982	Sub Prkg	10 14 00	Parking Structure Traffic Signage	6	EA	2,500.00	\$15,000
1983	Sub Prkg	32 10 00	Curb and Gutter	440	LF	25.00	\$11,000
1984	Sub Prkg	32 10 00	Sidewalks	1241	SF	15.00	\$18,615
1985	Sub Prkg	32 33 00	New Parking Stalls	1	LSUM	74,500.00	\$74,500
1986	Sub Prkg	32 33 00	Remove existing marking - conflicting with new stalls	1	LSUM	59,900.00	\$59,900
1987							
1988	Sub Prkg		Z - General Requirements				\$ 102,577
1989	Sub Prkg		Z10 - General Requirements				\$ 102,577
1990	Sub Prkg		Z1050 - Temporary Facilities and Controls				\$ 102,577
1991	Sub Prkg		(Unassigned)				\$102,577
1992	Sub Prkg	01 74 16	General Requirements	1	LS	102,577.28	\$102,577
1993							
1994			Grand Total				
1995							

GENERAL REQUIREMENTS							
Phase	Cost ID	CSI Code	Extension	Default CSI Description	Quantity / of Mea:	Unit Cost	Total Cost
<u>01</u>	<u>650000</u>	<u>A</u>		<u>General Requirements</u>			
<u>01</u>	<u>651000</u>	<u>A</u>		<u>Temporary Facilities</u>			
	651000			Storage Containers - Phase 1 & 2	26 Mo	\$ 350	\$ 9,100
	651000			Temporary Directional Signage - Phase 1 & 2	1 LS	\$ 10,000	\$ 10,000
	651000			Temporary Signage - Phase 1 & 2	1 LS	\$ 10,000	\$ 10,000
	651000			Traffic - Design & City Approval	1 LS	\$ 30,000	\$ 30,000
	651000						
	651000			Temporary Exterior Protection (20' K Rail) Rental - Phase 1	486 ea/mo	\$ 50	\$ 24,300
	651000			K Rail Install & Removal - Phase 1	1 LS	\$	-
	651000			Temporary Exterior Protection (20' K Rail) Rental - Phase 2	839 ea/mo	\$ 50	\$ 42,000
	651000			K Rail Install & Removal - Phase 2	1 LS	\$	-
	651000			Temp Construction Fence - 8' Chain Link w/Privacy Screen - Phase 1	1470 LF	\$ 10	\$ 14,700
	651000			Temp Construction Fence - 8' Chain Link w/Privacy screen - Phase 2	1440 LF	\$ 10	\$ 14,400
	651000			Temporary Gates - Pedestrian - Phase 1	4 ea	\$ 155	\$ 600
	651000			Temporary Gates - Double Swinging Vehicle - Phase 1	9 ea	\$ 295	\$ 2,700
	651000			Temporary Gates - Sliding Rolling Gate - Phase 1	1 ea	\$ 495	\$ 500
	651000			Temporary Gates - Pedestrian - Phase 2	4 ea	\$ 155	\$ 600
	651000			Temporary Gates - Double Swinging Vehicle - Phase 2	6 ea	\$ 295	\$ 1,800
	651000			Temporary Gates - Sliding Rolling Gate - Phase 2	0 ea	\$ 495	\$ -
	651000			Temporary Interior Barricades - Phase 1 (plywood)	560 LF	\$ 60	\$ 33,600
	651000			Temporary Interior Barricades - Phase 2 (plywood)	560 LF	\$ 60	\$ 33,600
	651000			Covered Walkway /Overhead Protection - Phase 1	540 LF	\$ 112	\$ 60,500
	651000			Covered Walkway /Overhead Protection - Phase 2	1480 LF	\$ 128	\$ 189,400
<u>01</u>	<u>651100</u>	<u>A</u>		<u>Tools & Supplies</u>		\$	-
01	651100			Misc. Tools & Supplies - Phase 1 & 2	26 Mo	\$ 2,000	\$ 52,000
<u>01</u>	<u>651200</u>	<u>A</u>		<u>Job Office/Job Office Cleaning</u>		\$ -	\$ -
<u>01</u>	<u>651220</u>	<u>A</u>		<u>Job Office Setup/Removal/Alteration</u>		\$ -	\$ -
<u>01</u>	<u>651290</u>	<u>A</u>		<u>Architects/Owners Office & Fit-out</u>		\$ -	\$ -
<u>01</u>	<u>651300</u>	<u>A</u>		<u>Plant Rentals & Equipment</u>		\$ -	\$ -
<u>01</u>	<u>651320</u>	<u>A</u>		<u>Vehicles/Parking</u>		\$ -	\$ -
<u>01</u>	<u>651400</u>	<u>A</u>		<u>Temporary Buildings</u>		\$ -	\$ -
<u>01</u>	<u>651500</u>	<u>A</u>		<u>Temporary Roads</u>		\$ -	\$ -
<u>01</u>	<u>651510</u>	<u>A</u>		<u>Construction/Maintenance</u>			
01	651510			Fence Maintenance/ Repair/ Allowance - Phase 1 & 2	26 Mo	\$ 400	\$ 10,400
	651510			Fence Install / Removal	ea	\$ -	\$ -
	651510			Fence Relocation	2910 LF	\$ 2	\$ 4,400
				Gate Relocation	9 ea	\$ 250	\$ 2,300
<u>01</u>	<u>651600</u>	<u>A</u>		<u>Winter Weather/Enclose Buildings/Maintenance</u>			
01	651600	B		Temporary Roofing Install & Maintenance	45000 sf	\$ 8	\$ 337,500
<u>01</u>	<u>651630</u>	<u>A</u>		<u>Rainwater Control</u>			
01	651630	B		QSWPP	26 Mo	\$ 1,000	\$ 26,000
01	651630	C		SWPP Labor	26 Mo	\$ 2,000	\$ 52,000
<u>01</u>	<u>651700</u>	<u>A</u>		<u>Special Scaffolding & Shoring</u>		\$	-
<u>01</u>	<u>651800</u>	<u>A</u>		<u>Temporary/Stairs/Ladders</u>		\$	-
01	651800	B		Temporary Ramps	1 LS	\$ 5,000	\$ 5,000
01	651800	C		Temporary Stairs		\$	-
SUBTOTAL TEMPORARY FACILITIES							\$ 967,400
<u>01</u>	<u>652000</u>	<u>A</u>		<u>Hoist Facilities</u>		\$	-
<u>01</u>	<u>652005</u>	<u>A</u>		<u>Material/Personnel Hoist(s) Rental/Maintenance</u>		\$	-
<u>01</u>	<u>652100</u>	<u>A</u>		<u>Hoist Operation</u>		\$	-
<u>01</u>	<u>652400</u>	<u>A</u>		<u>Temporary Elevators/Install/Maintenance/Operation</u>		\$	-
01	652400	B		Temporary Elevator Operator - Straight - Phase 1	2880 hr	\$ 109	\$ 313,900
01	652400	C		Temporary Elevator Operator - Overtime - Phase 1	360 hr	\$ 157	\$ 56,500
01	652400	D		Temporary Elevator Operator - DT - Phase 1	hr	\$ 210	\$ -
01	652400	E		Temporary Elevators Maintenance - Phase 1	9 Mo	\$ 800	\$ 7,200
01	652400			Refurbish existing service elevators after construction use - Phase 1	2 ea	\$ 3,000	\$ 6,000
01	652400			Temporary Protection at Temp Elevators - Phase 1	2 ea	\$ 2,000	\$ 4,000
				Temporary Elevator Operator - Straight - Phase 2	4160 hr	\$ 109	\$ 453,400
				Temporary Elevator Operator - Overtime - Phase 2	1040 hr	\$ 157	\$ 163,300
				Temporary Elevator Operator - DT - Phase 2	hr	\$ 210	\$ -
				Temporary Elevators Maintenance - Phase 2	13 Mo	\$ 800	\$ 10,400
				Refurbish existing service elevators after construction use - Phase 2	2 ea	\$ 3,000	\$ 6,000
				Temporary Protection at Temp Elevators - Phase 2	2 ea	\$ 2,000	\$ 4,000
<u>01</u>	<u>652600</u>	<u>A</u>		<u>Crane Rental/Maintenance/Operation</u>		\$	-
<u>01</u>	<u>652610</u>	<u>A</u>		<u>Crane Erect/Dismantle/Associate Set-ups/Jumps</u>		\$	-
SUBTOTAL HOIST FACILITIES							\$ 1,024,700
<u>01</u>	<u>653000</u>	<u>A</u>		<u>Temporary Utilities</u>		\$ -	\$ -
<u>01</u>	<u>653005</u>	<u>A</u>		<u>Temporary Heat/Install/Remove/Maintenance/Usage</u>		\$ -	\$ -
<u>01</u>	<u>653100</u>	<u>A</u>		<u>Temporary Light & Power/Install/Remove/Maintenance/Usage</u>		\$ -	\$ -
<u>01</u>	<u>653200</u>	<u>A</u>		<u>Temporary Plumbing & Toilets/Install/Remove/Maintenance/Usage</u>		\$ -	\$ -
01	653200	B		Existing Restroom Maintenance - Phase 1	9 Mo	\$ 1,000	\$ 9,000
01	653200	C		Existing Restroom Maintenance - Phase 2	13 Mo	\$ 1,000	\$ 13,000
01	653200	D		Temporary Toilets - Delivery/ Set up/ Removal - Phase 1	6 ea	\$ 30	\$ 200
01	653200	E		Temporary Toilets- 1x weekly service - Phase 1	9 Mo	\$ 1,968	\$ 17,700
				Temporary Toilets - Delivery/ Set up/ Removal - Phase 2	10 ea	\$ 30	\$ 300
				Temporary Toilets- 1x weekly service - Phase 2	13 Mo	\$ 3,280	\$ 42,600

GENERAL REQUIREMENTS							
Phase	Cost ID	CSI Code	Extension	Default CSI Description	Quantity / of Meas	Unit Cost	Total Cost
	<u>01</u>	<u>653400</u>	<u>A</u>	<u>Temporary Water/Install/Remove/Maintenance/Usage</u>			\$ -
	01	653950	A	Basin Sink Delivery/Set up/Removal - Phase 1	3 ea	\$ 30	\$ 100
	01	653970	A	Basin Sink Maintenance 1 x weekly - Phase 1	9 Mo	\$ 640	\$ 5,800
	01	653970	B	Basin Sink Delivery/Set up/Removal - Phase 2	5 ea	\$ 30	\$ 200
	01	653970	C	Basin Sink Maintenance 1 x weekly - Phase 2	13 Mo	\$ 800	\$ 10,400
SUBTOTAL TEMPORARY UTILITIES							\$ 99,300
	<u>01</u>	<u>654000</u>	<u>A</u>	<u>Cleaning</u>			\$ -
	01	654000	B	General Building Cleaning - Full Time Labor(s) - Phase 1	1440 hr	\$ 90	\$ 129,600
				General Building Cleaning - Full Time Labor(s) - Phase 2	2080 hr	\$ 90	\$ 187,200
	<u>01</u>	<u>654005</u>	<u>A</u>	<u>General Building/Glass Cleaning</u>			\$ -
	<u>01</u>	<u>654100</u>	<u>A</u>	<u>Dirt Chutes/Rubbish Removal/Recycling</u>			\$ -
	01	654100	B	Rubbish Removal - 40 Yard Bin (6 Tons) - 5 per week - Phase 1	160 ea	\$ 600	\$ 96,000
	01	654100	C	Rubbish Removal - 40 Yard Bin (6 Tons) - 5 per week - Phase 2	240 ea	\$ 600	\$ 144,000
	<u>01</u>	<u>654300</u>	<u>A</u>	<u>Site & Street Cleaning</u>			\$ -
	01	654300	B	Site & Street Cleaning	26 Mo	\$ 1,500	\$ 39,000
	01	654300	C	Water Truck/Sweepers	ea		\$ -
	<u>01</u>	<u>654900</u>	<u>A</u>	<u>Final Cleaning</u>			\$ -
	01	654900	B	Final Cleaning - Exterior of Bldg - Phase 1	SF	\$ 0.60	\$ -
	01	654900	C	Final Cleaning - Interior - Phase 1	42000 SF	\$ 0.60	\$ 25,200
	01	654900	D	Final Cleaning - Parking Structure - Phase 1	323000 SF	\$ 0.15	\$ 48,500
	01	654900	E	Final Cleaning - Site - Phase 1	SF	\$ 1.15	\$ -
		654900		Final Cleaning - Exterior of Bldg - Phase 2	SF	\$ 0.60	\$ -
		654900		Final Cleaning - Interior - Phase 2	153000 SF	\$ 0.60	\$ 91,800
		654900		Final Cleaning - Parking Structure - Phase 2	400000 SF	\$ 0.15	\$ 60,000
		654900		Final Cleaning - Site - Phase 2	SF	\$ 0.15	\$ -
SUBTOTAL CLEANING							\$ 821,300
	<u>01</u>	<u>655000</u>	<u>A</u>	<u>Protection & Safety</u>			
	01	655000	B	Safety Signage	1 LS	\$ 5,000	\$ 5,000
	01	655000	C	PPE	1 LS	\$ 15,000	\$ 15,000
	<u>01</u>	<u>655005</u>	<u>A</u>	<u>General Protection & Safety</u>			
	01	655005	B	Security Guard (s) - Straight Time	26 Mo	\$ 20,000	\$ 520,000
	01	655005		Security Guard (s) - Overtime			\$ -
	01	655005		Security Guard (s) - DT			\$ -
	01	655005	C	Site Access Control Equipment	1 LS	\$ 20,000	\$ 20,000
	01	655005	D	Worker Profile Cost			\$ -
	<u>01</u>	<u>655010</u>	<u>A</u>	<u>Barricades/Railings/Perimeter Cable/Toe Boards</u>			
		655010		Perimeter Site Fencing and Overhead Protection		\$ -	\$ -
	01	655010		Perimeter Protection at Bridge	LF		\$ -
		655010		Perimeter Protection at new CW	LF		\$ -
		655010		Perimeter Protection at Roof	1 LS	\$ 30,000	\$ 30,000
	<u>01</u>	<u>655050</u>	<u>A</u>	<u>Safety Program/Watchman/Traffic Control/Drug Testing</u>			\$ -
	01	655050	E	Safety Program & Incentives		\$ -	\$ -
	01	655050	B	Traffic Control Flagman - Phase 1	hr	\$ 16	\$ -
	01	655050	C	Traffic Control Flagman - Phase 2	hr	\$ 16	\$ -
	<u>01</u>	<u>655100</u>	<u>A</u>	<u>Protection Finish Work in Place</u>			\$ -
	01	655100	B	Protection Finish Work in Place - Phase 1	1 LS	\$ 20,000	\$ 20,000
	01	655100	C	Protection Finish Work in Place - Phase 2	1 LS	\$ 20,000	\$ 20,000
	<u>01</u>	<u>655200</u>	<u>A</u>	<u>Sidewalk Bridges/Fences</u>			\$ -
	<u>01</u>	<u>655500</u>	<u>A</u>	<u>Fire Watch/Rodent Controls/Extinguishers</u>			\$ -
	01	655500	B	Fire Extinguishers 5lbs (Purchase)	40 ea	\$ 50	\$ 2,000
	01	655500	C	Fire Extinguishers 10lbs (Purchase)	20 ea	\$ 100	\$ 2,000
	<u>01</u>	<u>655700</u>	<u>A</u>	<u>Protection of Public Utilities</u>			\$ -
	01	655700	B	Protection of Public Utilities	1 LS	\$ 14,000	\$ 14,000
	<u>01</u>	<u>655900</u>	<u>A</u>	<u>First Aid Facility</u>			\$ -
	01	655900	B	First Aid Facility	1 LS	\$ 8,000	\$ 8,000
SUBTOTAL PROTECTION & SAFETY							\$ 656,000
	<u>01</u>	<u>656000</u>	<u>A</u>	<u>General Expense</u>			\$ -
	<u>01</u>	<u>656005</u>	<u>A</u>	<u>Office Supplies/Equipment/Copier/Printer</u>		\$ -	\$ -
	<u>01</u>	<u>656100</u>	<u>A</u>	<u>Telephone/Fax/Project Communication</u>		\$ -	\$ -
	<u>01</u>	<u>656200</u>	<u>A</u>	<u>Blueprints</u>		\$ -	\$ -
	<u>01</u>	<u>656300</u>	<u>A</u>	<u>Permits & Notices</u>		\$ -	\$ -
	<u>01</u>	<u>656400</u>	<u>A</u>	<u>Computer/EDP Expense</u>		\$ -	\$ -
	<u>01</u>	<u>656410</u>	<u>A</u>	<u>Technology Infrastructure Fee</u>		\$ -	\$ -
	<u>01</u>	<u>656420</u>	<u>A</u>	<u>Financing Processing Fee</u>		\$ -	\$ -
	<u>01</u>	<u>656430</u>	<u>A</u>	<u>Turner Knowledge Network fee</u>		\$ -	\$ -
	<u>01</u>	<u>656440</u>	<u>A</u>	<u>Prolog Fee/TurnerTalk Expenses</u>		\$ -	\$ -
	<u>01</u>	<u>656500</u>	<u>A</u>	<u>Living/Travel Allowance & Relocation Expenses</u>		\$ -	\$ -
	<u>01</u>	<u>656600</u>	<u>A</u>	<u>Progress Photo's/Aerial Photography</u>			\$ -
	01	656600	B	Progress Photo's/Aerial Photography	6 per visit	\$ 500	\$ 3,000
	<u>01</u>	<u>656700</u>	<u>A</u>	<u>Miscellaneous General Expense</u>		\$ -	\$ -
	<u>01</u>	<u>656710</u>	<u>A</u>	<u>Postage/Express Mail/Messenger Service</u>		\$ -	\$ -
	<u>01</u>	<u>656740</u>	<u>A</u>	<u>Legal Expense</u>	1 LS	\$ 5,000	\$ 5,000
	<u>01</u>	<u>656750</u>	<u>A</u>	<u>Staff Training</u>	1 LS	\$ 10,000	\$ 10,000
	<u>01</u>	<u>656790</u>	<u>A</u>	<u>Testing & Inspection/Surveys</u>		\$ -	\$ -
	01	656790	B	Testing & Inspection			\$ -
	01	656790	C	Survey - New Bldg Controls	80 hr	\$ 245	\$ 19,600
		656790		Survey - New Elevator Shafts	16 hr	\$ 245	\$ 3,900
	01	656790	D	QA/QC	hr	\$ 245	\$ -
	<u>01</u>	<u>656865</u>	<u>A</u>	<u>Ceremonial & Meeting Expenses</u>			\$ -
	01	656865	B	Ceremonial & Meeting Expenses	1 LS	\$ 15,000	\$ 15,000

GENERAL REQUIREMENTS							
Phase	Cost ID	CSI Code	Extension	Default CSI Description	Quantity : of Meas	Unit Cost	Total Cost
	<u>01</u>	<u>656900</u>	<u>A</u>	<u>Top Charge</u>		\$ -	\$ -
	01	656910	A	Records Retention		\$ -	\$ -
SUBTOTAL GENERAL EXPENSE							\$ 56,500
	01	658450	A	Post Construction Funding		\$ -	\$ -
	01	658500	A	Other Taxes		\$ -	\$ -
	01	658600	A	Bonds		\$ -	\$ -
	01	658800	A	General Credits		\$ -	\$ -
	01	658900	A	Indirect on Changes/Additional Directs		\$ -	\$ -
	01	658950	A	Fringes/Taxes/Insurance & Bonds - Expansion #1		\$ -	\$ -
	01	658970	A	Fringes/Taxes/Insurance & Bonds - Expansion #2		\$ -	\$ -
SUBTOTAL TAXES, FRINGES & INSURANCE							\$ -
	01	659000	A	Consultant		\$ -	\$ -
	01	659005	A	Owner/Developer		\$ -	\$ -
	01	659010	A	Consultant - 1 Waterproofing / Roofing Peer Review (SGH)	1 LS	\$ 50,000	\$ 50,000
	01	659020	A	Consultant - 2		\$ -	\$ -
	01	659030	A	Consultant - 3		\$ -	\$ -
	01	659040	A	Consultant - 4		\$ -	\$ -
	01	659050	A	Consultant - 5		\$ -	\$ -
	01	659240	A	Trade Organizations		\$ -	\$ -
	01	659250	A	EEO Organization		\$ -	\$ -
	01	659950	A	Consultant - Expansion #1		\$ -	\$ -
	01	659997	A	Consultant - Expansion #2		\$ -	\$ -
SUBTOTAL CONSULTANTS							\$ 50,000
TOTAL GENERAL REQUIREMENTS							\$ 3,675,200

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BASIS OF pGMP ESTIMATE

This pGMP Estimate has been prepared in accordance with Schematic Design - Addendum 1 documents dated January 18, 2018 prepared by Gensler and current client performance design guidelines. Certain assumptions have been made in preparing this estimate that are intended to complement the documents. These assumptions form the following Basis of the pGMP Estimate.

QUALIFICATIONS BY BID PACKAGE

GENERAL

1. The pGMP and our proposed schedule submitted with pGMP dated June 5th, 2018 have been prepared in accordance with the Phasing requirements established by Ownership (Brookfield), and clarified in RFI 1 to the RFP as outlined below:
 - a. Phase 1 – Building C and Olympic Parking.
 - b. Phase 2 – Building A/B and associated Underground Parking Garage

Since the proposal schedule, dated Feb, 2018, we have incorporated a series of updates to the project schedule that are now reflected within Exhibit R, pGMP schedule, dated June 19th, 2018.

2. The Exhibit R, pGMP Schedule, dated June 19th, 2018 has been updated to reflect the following:
 - a. The New Pavilion will begin construction when tenants have been relocated from Buildings A & B to Building C, which occurs upon completion of Phase 1.
 - b. The modernization of Building A & B Passenger Elevators will not begin until the start of Phase 2.
 - c. The pGMP schedule reflects early elevator modernization work for the Service Cars will be performed prior to the start of each phase in order to avoid the costs associated for adding a manlift to Project. The modernization will be scheduled to ensure one (1) set of service cars will be available to Brookfield during this work. We understand that this will need further coordination and evaluation with Ownership to ensure safety and space requirements with tenants and minimize impacts to Building Operations. If no service car modernization work can be accommodated, we will analyze and study the schedule to take this constraint into account in order to maintain the targeted completion date.
 - d. We added a three (3) month activity for Owner Abatement / Soft Demolition immediately after tenant relocation from Buildings A & B to Building C, which occurs after completion of Phase 1. Phase 2 Demolition at Buildings A & B to start after the three (3) month duration.
3. The General Conditions estimate reflected in the pGMP matches the total value included with the RFP proposal and does not include an extension of three (3) months due to the Owner Abatement duration and does not account for the overall additional schedule extension associated with the start of Pavilion activities after tenant relocation from Buildings A & B, which currently extend the schedule by an additional three (3) months. Any additional General Conditions to support the

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BASIS OF pGMP ESTIMATE

Exhibit R, pGMP Schedule, dated June 19th, 2018 shall be further discussed, evaluated, and presented to Brookfield prior to the final GMP.

4. The cost estimate does not include any the costs or schedule impacts associated with maintaining current tenants in place during construction (including but not limited to Bank of America, Ross and Ignited). Further evaluation of cost and schedule impacts would need to be assessed and agreed to between Turner and Brookfield. This would include any and all design of temporary facilities and would be subject to approval by the Authorities Having Jurisdiction.
5. We assume full access and coordinated use of the existing Building Maintenance Units / Window Washing System for each building for all work performed on the exterior façade. We understand that Ownership has acquired all certification for use of this equipment.
6. The pGMP assumes access and use of the Building C Loading Dock as our means of transporting constructions crews and material in and out of the project in Phase 1. We understand that the Building C and B Loading Dock share the same entrance, and therefore we would carefully coordinate with Ownership for use of Building B Loading Dock during trade shows or any other CMC events.
7. We assume parking will be available onsite for Turner and its Trade partners at Olympic Parking for Phase 1 and A/B Subterranean for Phase 2. If parking is not provided during the phases due to onsite tenants, there will be additional costs incurred – not included at this time.
8. We assume the use of Building C basement for Turner's and Trade partners' construction offices for the construction duration.
9. RFP Section 3.01 and RFI 57 make reference to the performance of a pre-construction survey. We understand that an Architectural Survey (via Laser Scanning) of the existing building is currently being conducted at CMC and that access to Revit Model and Point Cloud created from this effort will be available for our use during preconstruction at no charge.
10. The pGMP includes allowances for code minimum signage for each building and exterior signage.
11. We assume all required structural modifications are as shown on the drawings.
12. Our proposal assumes no seismic upgrade to any of the existing structures is required.
13. We have not included any cost for work required by Authorities Having Jurisdiction.
14. We assume Builders Risk insurance will be provided by the owner. However, we can provide an Alternate Cost if Brookfield requires.
15. Any issues arising out of union vs non-union labor disputes shall be resolved in line with the provisions set forth in the Construction Management Agreement. Since the PGMP was created with an all-union assumption, it is understood that any measures required to manage union relations will be a change to the GMP.
16. All existing-to-remain (unmodified) items are assumed to meet current code compliance.
17. All utility consumption fees and usage costs are by ownership.
18. All existing stair wells are assumed to meet any new stair pressurization requirements. The pGMP does not include any rework of the existing stair wells required to meet stair pressurization requirements.
19. We assume the owner is responsible for the following items:
 - Los Angeles Department of Building and Safety Plan Check and Permit Fees
 - Los Angeles Fire Department Plan Check and Permit Fees
 - Los Angeles Bureau of Engineering Plan Check and Permit Fees
 - Separate building maintenance contracts.
 - Extended warranty programs
 - Air Quality permits and fees (i.e SCAQMD, NPDES)

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BASIS OF pGMP ESTIMATE

- Environmental Impact Reports
 - 3rd party commissioning services
 - Methane mitigation measures
 - Waste recycling content deposits
 - Any bonds, deposits, or otherwise permit fees associated with A, B, and R-Permit work.
20. Lobby & restroom finishes allowances have been increased as per discussions with Brookfield.
 21. The pGMP includes design-bid-build MEP trades per the RFP. The pGMP does not include any design and engineering fees associated with Design Build MEP delivery method as this requirement was developed after submission of the proposal.
 22. The pGMP does not include any design contingency associated with design-build MEP trades. Any required contingency will be evaluated during MEP buyout and included in the final GMP.
 23. Per Brookfield's request, we have eliminated any design contingency, which is considered part of Brookfield's controlled contingencies outside of the GMP. Any cost increase due to further design development unanticipated by the pGMP will be an increase reflected in the final GMP.
 24. The pGMP does not include any A, B, R-Permit scope that may be required pursuant to the City of Los Angeles' review of the design.
 25. The pGMP does not include any escalation contingency. It is assumed that any required premiums for escalation will be covered by contingencies outside the GMP.

BP 01 – DEMOLITION

1. Cost for soft (interior) demolition of two (2) floors at Buildings A and B is included as an allowance in the pGMP update. All soft (interior) demolition on remaining floors of Building A & B is to be performed by Owner during the abatement process.
2. The pGMP assumes that soft demolition (floor, partition and access door) of Basement Level at Building C is included, however it is not referenced in the Demolition Plans.
3. The schedule sequence includes structural modification prior to demolition to reduce shoring. The base cost estimate includes an allowance of \$50,000 for shoring. The extent of shoring for the existing structure during the demolition effort will need to be further evaluated with the Structural Engineer.
4. Based on previous site observations at CMC, there is an existing staircase with glass guardrails from Level 4 to Level 5 that we assume shall remain protected in place so that it can be utilized for a multi-floor office tenant.
5. Abatement of hazardous material will be completed by the Owner prior to start of construction and that any undetected hazardous material is discovered during construction will be the responsibility of the Owner to remediate.

BP 02 – CONCRETE AND REINFORCING

1. We have included costs for structural concrete and reinforcing upgrades only where indicated in the bid documents.
2. New concrete slab infill work includes 4-1/2" thick concrete on metal deck where required with reinforcing mesh to match existing.
3. Cracks in the concrete structure appear to be non-structural, therefore, we do not include any repair of cracks unless the location and required repair is specifically identified in the drawings.

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BASIS OF pGMP ESTIMATE

4. We have included Post-Tensioned elevated floor deck and beam at the Pavilion building. The roof deck is provided as metal deck over steel joists as indicated on the Structural Drawings.
5. We have included two CIP concrete stairs at the Pavilion building as shown on the structural drawings.
6. All concrete at the Pavilion building is included as normal gray concrete. Integral color concrete is not included.

BP 03 – MASONRY

1. We have assumed 8" CMU at all elevator shafts and pits shown in the parking structure. All elevator shafts above the parking levels is carried as framing and drywall.
2. We have included 2'-10" high grouted 12" CMU pedestrian protection walls at elevator lobbies at Olympic Parking Structure per PSK-10.

BP 04 – STRUCTURAL STEEL & MISCELLANEOUS METALS

1. We have included costs for structural steel upgrades only where indicated in the bid documents.
2. All structural steel repair and upgrade work is assumed to take place prior to demolition of concrete decks, walls, or beams and columns as required to minimize the need for shoring.
3. We have included structural beam strengthening as 30 lbs./lf where indicated on the documents.
4. We have included 8" diameter concrete filled bollard pedestrian protection at elevator lobbies at Olympic Parking Structure per PSK-10.
5. We have included Structural and Miscellaneous steel at the Pavilion Building as required by the Structural drawings.

BP 05 – FIREPROOFING

1. As clarified in RFI Response #2, all abated fireproofing will be replaced by Ownership (which would also include any intumescent paint of the existing structure at Bldg. A & B) and the only fireproofing included in the pGMP will be for miscellaneous patching of existing and new structural steel members. Intumescent paint is included only at the exposed structural columns and beams at the Internal Street.
2. We have included costs for fireproofing as required for structural, miscellaneous steel, and new framing and drywall upgrades only where indicated in the bid documents.
3. We have included slab edge fire safing for Buildings A and B only as the current condition does not have any slab edge fire safing in place. Building C has slab edge fire safing in place, no rework is currently identified to be required.

BP 06 – METAL STAIRS

1. We have included the "Showcase Stair" levels 2 to 3 at building C, including glass railings similar to existing stair at Building B, level 4 to 5.
2. We have included the back of house fire exit stairs from Ground Level to Level 4 and transfer stair from L4 to L5 at building C.

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3. We have included costs for new metal stairs and upgrades only where indicated in the bid documents at Building C. The drawings do not require and upgrades to existing metal stairs in buildings A and B, and therefore we exclude any modifications to existing metal stairs that may be required by the Authorities Having Jurisdiction.
4. We have included cost for decorative steel railing at the feature stair.

BP 07 – ROOFING & WATERPROOFING

1. We have included demo and replacement of all roofs (re-roofing) of Buildings A, B, & C. per RFI 36 response.
2. We have included WP-1 waterproofing system at the Plaza level under all architectural site concrete.
3. We have included WP-1 waterproofing system at Building A, B, C, exterior decks and bridges.
4. We have included the cost for a new coating for the helipad at the penthouse roof on Building C.
5. Included is an allowance added for the flashing at the locations where existing skylights are removed.

BP 08 – DOORS, FRAMES AND HARDWARE

1. An Allowance for repair of existing doors and hardware has been included. This allowance is specifically inclusive of doors at egress pathways (i.e. stairs and exits). The pGMP assumes no work is required at all other hardware at existing doors to remain.

BP 09 – GLASS & GLAZING

1. The new curtainwall at the Office Levels of Buildings A & B (Enclosure System Type EWS 01) is included in our Proposal as a unitized window wall system, for which we believe is the most cost effective and expedient approach.
2. The pGMP assumes that the existing Building A & B structure and embedded steel at the top of the slab edges will be sufficient for attaching the wind load clips for the new unitized curtainwall system. If it determined that the existing structure will not work, we have included an Alternate Allowance to address any additional structural reinforcing or modifications required.
3. New curtainwall (Enclosure System Type EWS 08) at the deleted bridges at Building A & B has been included as well as new storefront and glass entrances at exterior bridge locations. We assume fire rated doors or automatic operators are not required at these locations.
4. As clarified in RFI 41, Retail Storefront at Ground Level (designated at Type SF 02, SF 03, SF 04 and SF 06 in Appendix 1) shall be provided by tenants. However the pGMP includes bulkheads constructed of 1/8" thick aluminum plate panels installed over metal studs, sheathing, insulation and vapor barrier, and unfinished drywall at the interior side.
5. Alternate pricing has been provided for Ground Floor Storefront at Main and 9th Street (Types SF 02, SF 03, and SF 04 in Appendix 1). See Alternates Section.
6. Storefront Type SF 01 and glass entrances at new Entry Lobbies (Building A & B Ground Floor and Building C 2nd Floor) have been included in our Proposal. Alternate Allowance pricing is included for automatic door operators at these entries.

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BP 10 – DRYWALL, METAL FRAMING & PLASTER

1. The estimate includes the framing and plaster finish at the new ground level storefronts.
2. Framing and drywall at the interior side of the precast exterior have been included.
3. Lath and plaster ceilings have been included at the ground level and 2nd floor stair/escalator areas.
4. Lath and plaster ceilings have been included at underside of bridges.
5. New drywall ceilings have not been included at Elevator Lobbies.
6. New ceilings have been included at Restrooms only.
7. Painted drywall finish has been included at underside of escalators and escalator sides.
8. Included is Level 4 drywall finish, typical throughout.
9. The estimate includes 10 access panels per floor, total 130.
10. Attachment to structure for slab-to-slab wall framing is assumed as shot-pins.
11. Temporary weather walls added at future retail storefronts in the interior street and arcades (designated at Type SF 02, SF 03, SF 04 and SF 06 in Appendix 1) to be removed by other upon installation of storefront by future tenants.

BP 11 – PAINT & INTUMESCENT COATINGS

1. Intumescent paint has only been included at the existing exposed structural columns along Grid Lines F & J (“Interior Street”) as called out in Note 17 on A1.204.

BP 12 – CODE SIGNAGE

1. Code Signage has been included as Allowances.

BP 13 – VERTICAL TRANSPORTATION

1. The Vertical Transportation Scope includes the following items:
 - -Ten (10) new Overhead Gearless Elevators
 - -Two (2) new MRL Elevators
 - -Eighteen (18) new escalators
 - - Twenty-Seven (27) modernized elevator units
2. Any other additional equipment recommendations by the Vertical Transportation Consultant will require further design information in order to develop complete pricing.
3. The modernization of all existing passenger elevators at Building A & B (8 total) is based on retaining the existing machine room location and hoistways. The top landing of each car to be retained for hoistway access. The reason for this approach is to avoid unforeseen, significant cost and schedule impacts such as potential asbestos abatement, seismic upgrades, new hoistway ventilation and structural modifications.
4. Please note the following clarification to the elevator modernization specifications. The modernized elevators shall operate within their original duty range as follows: Parking cars A5-A6: 2500 lb. capacity, 200 fpm speed / service car A7: 4500 lb. capacity, 250 fpm speed /

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- service car A8: 3000 lb. capacity, 250 fpm speed / service car B7: 4500 lb. capacity, 350 fpm speed.
5. The pGMP includes complete replacement of the existing hall door panels in lieu of stainless steel cladding or refinishing so as to avoid the disturbance of asbestos when applying new hardware and fasteners to the panels.
 6. New door panels for modernized passenger elevators A1-A4, B1-B4 and C1-C6 will have a no. 4 satin stainless steel finish and the associated hall door entrance jambs will be clad with matching no. 4 stainless steel. New hall door panels for parking cars A5-A6, B5-B6, OPS 1-3 and service cars A7-A8, B7, B8 and C7-C8 will have a prime painted finish.
 7. The elevator modernization scope does not include the installation of engineered seismic spreader brackets, seismic rated fish plates, and the addition of hardware changing the clearance of the counterweight frame to the guide rails or any other seismic retrofit work in the elevator hoistways. If the local inspection authority requires any of these items they will be addressed as additional scope. We recommend meeting with the Authorities Having Jurisdiction early in the preconstruction to determine their conditions of approval.
 8. In addition to the \$25,000 cab interior allowance for each service car (6 cars total), the pGMP also includes complete replacement of the steel cab shells due to structural damage to the existing shells.
 9. We have included replacement of the Escalators at the Building C Bridge as we believe this is the most cost effective approach which provides both schedule advantages and logistical flexibility.
 10. Glass balustrade escalators (in lieu of high deck stainless steel) are included in our proposal in order to provide the most effective solution.
 11. The pGMP assumes that the existing structural conditions will support the new escalator equipment. Onsite verifications shall be conducted for confirmation.
 12. Demolition permit fees and standby as needed for removal of the 42 escalators that are not being replaced has been included as part of the Vertical Transportation scope of work.
 13. Architectural Sheet A1.204 Note 11 shows the addition of a new ADA access lift at the Building C Olympic Blvd entrance. However due to its location being beyond the limits of the scope (as noted on the same sheet), we have included this as an Alternate Allowance. Please see Alternates Logs.

BP 14 – FIRE PROTECTION

1. Design-build Preconstruction services have been included in this Estimate and the chosen subcontractor will be the Engineer-of-Record.
2. Fire pump systems:
 - a. (2) new 1,500GPM Fire pumps are included in this Estimate
 - b. Water storage tanks are existing-to-remain as noted.
3. Subterranean and Olympic Parking:
 - a. This Estimate assumed existing wet sprinkler are existing-remain. However, this estimate includes an allowance for repairs and modifications to these existing systems of \$467,190.
 - b. This estimate does not include flushing of any existing-to-remain systems
4. Pavilion: Assumes that Fire water feed will come from street as shown in Addendum #1, installed within the parking level below. This estimate includes stub and cap to the building exterior wall. A new utility main from outside is not assumed for the new Pavilion
5. This estimate assumes upright heads throughout as a core/shell sprinkler system

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6. This estimate assumes flexible-pipe head assemblies where allowed by code in BOH/finished areas.
7. Trade permit and plan check fees are included.
8. This Estimate assumes that the Fire Protection (Sprinkler) design will be Design Built to NFPA and CoLA requirements.
9. This Estimate includes costs for Professional Liability through Construction and the Subcontractor will be the Engineer-of Record.
10. Supplemental-level fire sprinklers are included where required by code.
11. This estimate includes industry-standard warranties of 1-year from substantial completion (see alternates).
12. Site Fire utilities outside building lines are assumed existing-to-remain.
13. Costs or Fees to comply with Factory-Mutual, or other equivalent requirements are not included in this Estimate.
14. Temporary water consumption fees for flushing and testing are assumed by the building ownership.
15. This Estimate assumes that all existing sprinkler related drain systems are in good working order.
16. Current design does not indicate the requirements of any deluge, water-curtains, pre-action systems or glazing protection and are not included in this Estimate.
17. Clean agent suppression is not assumed in this estimate.
18. This estimate includes an allowance for repairs and modifications to the existing incoming fire water mains within each building of \$36,000.
19. This Estimate assumes that existing mains / risers as well as piping for Subterranean Parking are in good working order can be reused. Current pricing is based replacing existing system in Buildings.
20. The points of connection will be to the existing overhead fire sprinkler systems in the stairwells and basement areas.
21. The existing fire sprinkler systems in the parking levels of the subterranean garage will be augmented to allow for the installation of new structural components.
22. All materials used to be listed for fire protection installation. All threaded piping will be schedule 40 black steel & all grooved piping will be schedule 10 black steel.

BP 15 – MECHANICAL HVAC

1. This Estimate includes the quantity of equipment, ductwork and wet piping systems shown on the drawings including scope derived from the MEP Narrative.
2. Allowances are included for mechanical accessories (e.g. dampers, valves, traps, supports and related).
3. This Estimate includes an allowance to furnish and install a new DDC control system throughout each building / area.
4. It is assumed that any hydronic/refrigeration piping from the condenser unit mechanical rooms are part of Tenant work by others.
5. This Estimate includes new CO monitoring systems in the below-grade parking areas, including the Olympic structure
6. The Outside Air units (AHU) are included as industry-standard grade specification units.
7. Pollution control units or provisions for future are not included.
8. Specialized or HEPA filtration is not noted or included in this estimate.
9. Fire Wrap for any grease duct installed is assumed by Tenants

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10. This Estimate does not assume any methane detection or venting systems are required.
11. This Estimate does not include third-party commissioning services, inclusive of any Enhanced scope required for current Cal-green and Energy codes.
12. It is assumed that a Rational Analysis report is not a required study on the existing building.
13. This estimate includes industry-standard warranties of 1-year from substantial completion.
14. This proposal does not assume core HVAC services for food service systems or equipment.
15. This Estimate includes testing and balancing of all new or modified, reworked equipment and systems
16. This estimate includes unit allowances for the split-level rack for future tenant condensing units in the new mechanical rooms in accordance with the MEP Narrative. Structural review may be required and is not include in this Estimate.

BP 16 – PLUMBING

1. This Estimate includes the quantity of fixtures and equipment shown on the drawings including scope derived from the MEP Narrative
2. Existing building water pressure and volume is assumed to be sufficient for all operations.
3. All Food Services, appliances and equipment, are assumed tenant / owner-provided. This estimate does include services run-to and capped at the locations shown on the documents.
4. Modifications to any underground drainage systems are not included (none assumed required).
5. (4) Grease Interceptors systems are included.
6. (3) 2,000gal per MEP narrative
7. (1) 1,500gal per Addendum #1 for Pavilion
8. This estimate does not include any branch grease waste piping or heat trace systems to the new grease interceptors for tenant use.
9. Domestic Water: New copper (vertical) and PEX (horizontal) is included where required for new and remodeled specific areas. Main service at each building is assumed existing to be reused. Industrial water is included as copper
10. Wet utilities into the buildings / areas are assumed existing-to-remain and unmodified.
11. Pavilion: The new wet utility stubs shown on addendum #1 are include to the edge of the building line and allowances for POC's are included
12. Tenant and Retail areas: 2" cold water stubbed and capped to nearest core walls are included (2) areas per floor.
13. No new emergency Eye/full wash stations are assumed to be required.
14. Allowances for rework of low pressure natural gas infrastructure is included
15. New Emergency drain systems are included at the lower level of each parking Structure.
16. Gray Water infrastructure not included (See alternates)
17. Piping insulation is included for Domestic Hot Water supply and return systems. Insulation on Storm and condensate drain system are not assumed required
18. This Estimate includes allowances for non-utility metering and low voltage wiring.
19. This Estimate includes (3) new showers (Unisex and ADA)
20. As directed, services for car wash area are not included.
21. This estimate assumes that branch water service devices in/at existing-to-remain walls and other surfaces are existing-to-remain (E.g. hose-bibs, drains at lowers levels).
22. This estimate assumes that roof drain and storm water leaders and collection piping in/at existing-to-remain areas and other surfaces are also existing-to-remain.

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BP 17 – ELECTRICAL & LOW VOLTAGE

1. This Estimate includes the quantity of equipment, feeders and electrical scope shown on the drawings including scope derived from the MEP Narrative.
2. Lighting allowances have been included in this Estimate:
 - a. Loading dock lighting is assumed to be existing-to-remain
 - b. 2 lamp open strip lights in all future tenant retail areas to comply with minimum egress/code requirements
3. Allowances for new lighting control (global and local) are included to comply with current Cal-Green and energy code requirements to new and revised program area. Building master control and head end modifications are not included in this Estimate
4. For branch convenience power pending final design, this estimate includes the following assumptions:
 - a. Allowances are included for new convenience and service outlets with branch wiring where required by code and in back of house areas
5. All areas / buildings includes allowances for new light fixtures in the Public, plaza, exterior and other back of house areas
6. This Estimate does not include new fixtures or electrical services in shell spaces (other than code-required lighting and egress minimums).
7. This Estimate includes a new grounding/bonding systems related to the new switchgear and situation electrical system.
8. Lighting allowances are included for landscape and other exterior decorative locations.
9. Tenant Spaces per floor: (4) areas stubbed/capped at core walls:
 - a. Includes branch circuit and Fire alarm and communications raceways / boxes. All labeling and identification for extension by tenants are included.
10. Building A Only: This Estimate includes the 84-circuit branch panelboards for future tenants. Branch circuit breakers within these panels are assumed by the tenant and are not included in this Estimate.
11. Electrical feeder conduit stubs and caps for future tenant improvements and extensions by others are included; conduit raceways are provided to these spaces based on the size of the C.O. shown on the single-line diagram.
12. Fire alarm system: This Estimate includes new building-wide fire alarm system and Smoke Control.
13. This estimate includes a new 2,000KW emergency system generator and related appurtenances in Building C
14. This estimate does not include any work on the existing 750KW emergency generator and related appurtenances in Building A/B. Included is the new feeder connections as shown on the electrical drawings
15. This Estimate assumes the reuse of existing bus-duct risers/components per the documents:
 - a. New UL certification and warranty of this scope is not included
 - b. Testing and re-torquing of existing fasteners/lugs is included
16. Building accelerometer systems (existing or new) were not noted and are not included in this estimate.
17. This Estimate assumes that existing conduit and wiring for branch applications, where in good working order can be reused (i.e. where embedded in existing decks, core-shafts and walls).
18. Dry utilities into the buildings / areas are assumed existing-to-remain and unmodified.

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19. The pGMP does not include any repair or rework of existing conduit in cabling in areas that are to remain, for instance in the Subterranean Parking.

COMMUNICATIONS – SECURITY – AUDIO-VISUAL:

1. As Communications, Audio-Visual, IT/IS or Security documents are currently being produced, this Estimate includes allowances for boxes, raceways and 120v power and as qualified below.
2. Allowance includes conduit and boxes for WAP (Wireless Access Points) in interior finished areas.
3. An allowance for emergency responder Distributed Antennae system (DAS) infrastructure, wiring and devices are included.
4. For Tele/Data (LAN-IT/IS) and other communications wiring, this Estimate includes allowances for conduit, boxes and line-voltage power to MDF/IDF rooms and closets for all core and back of house areas in addition to Public areas. Riser cabling from MDF to floors IDF of each floor are included.
5. This Estimate assumes the following will be provided by others / future:
 - a. Tele/Data - IT/IS system (head end equipment, wiring and devices including POS systems)
 - b. WAP or other Wi-Fi devices
 - c. Cellular or utility DAS systems and wiring
 - d. IoT infrastructure allowances in addition to actual scope noted.
 - e. Audio / visual systems (displays/panels, conduit, wiring/devices)
 - f. Digital Signage and Wayfinding electronic systems
 - g. LED Façade (walls, features and displays). Division 26 has all power and infrastructure allowances included
 - h. Security and CCTV (wiring and devices to system). Conduit and power for all new doors / hardware are included as well as, allowances for conduit and boxes for Access Control and CCTV

BP 18 – ASPHALT PAVING & STRIPING

1. The pGMP includes only Striping at parking as indicated in Appendix 2 Narrative only.
2. B Permit work is not indicated or included in the Estimate and Schedule. Reference Site Concrete below for exception.

BP 19 – SITE CONCRETE

1. Sidewalk upgrade is provided as an Owner Alternate Allowance.

BP 20 – LANDSCAPING

1. No protection or replacement of existing off-site landscaping is included.
2. Groundcover over structural mounds is provided per landscape drawings only.

BP 21 – PARKING CONTROL EQUIPMENT

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1. Parking Control Equipment cost is based on RFI 21 responses.

BP 22 – RESTORATION

1. The pGMP includes façade repair work as outlined in Appendix 1 entitled Enclosure Systems, however please note the following:
 - a. An allowance of \$396,000 is included for Item 1.1 specific to repair of cracking at existing precast face. Further assessment of the damage is necessary to quantify and determine feasible and durable repair methods. We believe that removal of any portion of the existing precast on lower columns and roof level would expose hazardous material from within, therefore do not recommend any removal of precast during the repair operation.
 - b. Glass sealant repair work consists of a wet sealing approach which includes removing deteriorated caulking at gaskets, cleaning and removal of dirt and contaminants, solvent wipe to prepare for new sealant, and replace missing / removed caulking with a silicone sealant.
 - c. In order to maintain the integrity of the existing curtainwall, we do not recommend removals for repair work. Therefore the pGMP includes the recoating of the aluminum mullions which includes hand sanding to remove oxidation of metal, solvent wipe to prepare for new coating and application of a two component high performance coating to match the original aluminum finish as close as possible.
 - d. An allowance of \$25,000 for Glass Repair work referenced in Item 2.7 as further assessment and method of repair needs to be evaluated and confirmed with the Design Team and Ownership.
2. The pGMP assumes any restoration work of the following items are not required (as there are not referenced in any of RFP Documents):
 - a. Restoration of existing aluminum panels and tile at Building C. However we have included an Alternate Allowance for resealing and recoating of aluminum panels.
 - b. Restoration work at the existing bridge from Building C to the Olympic Parking Structure.
 - c. Restoration or cleaning of the existing ground floor storefront to remain in place as outlined in the Architectural Documents.

END

Exhibit M

GMP

Pursuant to Section 15.5.1 of this Agreement, when accepted by the Owner, the guarantee by the Construction Manager, as revised pursuant to this Section 15.5.1, shall thereafter be referred to as the GMP, and shall be attached hereto as Exhibit M.

Exhibit N

Design Professionals

Architect:

Gensler
500 S Figueroa Street
Los Angeles, CA 90071

Structural Engineer:

Nabih Youssef Associates
550 S Hope Street, Suite 1700
Los Angeles, CA 90071

MEP Engineer:

Glumac
707 Wilshire Blvd, 23rd Floor
Los Angeles, CA 90017

Other consultants will be assigned to the Project as required.

Exhibit O

Drawings



California Market Center
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Exhibit A - Contract Documents List

SCHEMATIC DESIGN - ADDENDUM #1

Drawing Set

Sheet Number	Page Number of Attachment	Description	Prepared By	Document Date
General				
-	1	Schematic Design - Addendum #1 CMC	Gensler	January 18, 2018
G0.001	2	Project Information	Gensler	January 18, 2018
G0.006	3	Accessibility Notes	Gensler	January 18, 2018
G0.007	4	Accessibility Notes	Gensler	January 18, 2018
G0.008	5	Accessibility Diagrams	Gensler	January 18, 2018
G0.009	6	Accessibility Diagrams	Gensler	January 18, 2018
Civil				
C0.01	7	Title Sheet	kpff	January 18, 2018
C1.00	8	Survey - A (For Reference Only)	kpff	January 18, 2018
C1.01	9	Survey - B (For Reference Only)	kpff	January 18, 2018
C1.30	10	Podium Topping Slab Grading Plan - A	kpff	January 18, 2018
C1.31	11	Podium Topping Slab Grading Plan - B	kpff	January 18, 2018
Landscape				
L1.204	12	Landscape Plan Ground Floor Plan	PB&Co	January 18, 2018
L8.002	13	Landscape Enlarged Ground Plan At Pavilion	PB&Co	January 18, 2018
L8.301	14	Landscape Sections	PB&Co	January 18, 2018
Demolition				
DM1.001	15	Parking Demolition Level B3 Plan	Gensler	January 18, 2018
DM1.002	16	Parking Demolition Level B2 Plan	Gensler	January 18, 2018
DM1.003	17	Parking Demolition Level B1 Plan	Gensler	January 18, 2018
DM1.004	18	Ground Floor Demolition Plan	Gensler	January 18, 2018
DM1.005	19	2nd Floor Demolition Plan	Gensler	January 18, 2018
DM1.006	20	3rd Floor Demolition Plan	Gensler	January 18, 2018
DM1.007	21	4th Floor Demolition Plan	Gensler	January 18, 2018
DM1.008	22	5th Floor Demolition Plan	Gensler	January 18, 2018
DM1.009	23	6th Floor Demolition Plan	Gensler	January 18, 2018
DM1.010	24	7th Floor Demolition Plan	Gensler	January 18, 2018
DM1.011	25	8th Floor Demolition Plan	Gensler	January 18, 2018
DM1.012	26	9th Floor Demolition Plan	Gensler	January 18, 2018
DM1.013	27	10th Floor Demolition Plan	Gensler	January 18, 2018
DM1.014	28	11th Floor Demolition Plan	Gensler	January 18, 2018
DM1.015	29	12th Floor Demolition Plan	Gensler	January 18, 2018
DM1.016	30	13th Floor Demolition Plan	Gensler	January 18, 2018
DM1.017	31	14th Floor Demolition Plan	Gensler	January 18, 2018
DM1.018	32	Roof Demolition Plan	Gensler	January 18, 2018
Architectural				
A0.201	33	Zoning Code Floor Area Calculations - B3 - Ground	Gensler	January 18, 2018
A0.202	34	Zoning Code Floor Area Calculations - 4 - 9	Gensler	January 18, 2018
A0.203	35	Zoning Code Floor Area Calculations - 10 - Roof	Gensler	January 18, 2018
A0.204	36	Floor Area Calculations - B3 - 3rd Floor	Gensler	-
A0.205	37	Floor Area Calculations - Floors 4-9	Gensler	January 18, 2018
A0.206	38	Floor Area Calculations - Floors 10-Roof	Gensler	January 18, 2018
A1.101	39	Site Plan	Gensler	January 18, 2018
A1.201	40	Parking Level B3 Plan	Gensler	January 18, 2018
A1.202	41	Parking Level B2 Plan	Gensler	January 18, 2018
A1.203	42	Parking Level B1 Plan	Gensler	January 18, 2018
A1.204	43	Ground Floor Plan	Gensler	January 18, 2018
A1.205	44	2nd Floor Plan	Gensler	January 18, 2018
A1.206	45	3rd Floor Plan	Gensler	January 18, 2018
A1.207	46	4th Floor Plan	Gensler	January 18, 2018
A1.208	47	5th Floor Plan	Gensler	January 18, 2018
A1.209	48	6th Floor Plan	Gensler	January 18, 2018
A1.210	49	7th Floor Plan	Gensler	January 18, 2018
A1.211	50	8th Floor Plan	Gensler	January 18, 2018
A1.212	51	9th Floor Plan	Gensler	January 18, 2018
A1.213	52	10th Floor Plan	Gensler	January 18, 2018
A1.214	53	11th Floor Plan	Gensler	January 18, 2018
A1.215	54	12th Floor Plan	Gensler	January 18, 2018
A1.216	55	13th Floor Plan	Gensler	January 18, 2018
A1.217	56	14th Floor / Roof Plan	Gensler	January 18, 2018
A1.218	57	Roof Floor Plan	Gensler	January 18, 2018
A2.001	58	North & South Elevations	Gensler	-
A2.002	59	East & West Elevations	Gensler	-
A2.101	60	Long Interior Elevation	Gensler	-
A2.102	61	Short Interior Elevations	Gensler	-
A2.201	62	Building Sections	Gensler	-
A2.202	63	Building Sections	Gensler	-
A3.101	64	Internal Street - Ground Level Enlarged Plan	Gensler	-
A3.102	65	Internal Street - 2nd Level Enlarged Plan	Gensler	-
A3.103	66	Internal Street - Demo Enlarged Plan	Gensler	-
A3.201	67	Internal Street - Enlarged Elevations	Gensler	-
A3.202	68	Exterior Arcade - Building B	Gensler	-
A3.203	69	Exterior Arcade - Building A	Gensler	-
A3.301	70	Internal Street Sections	Gensler	-
A3.401	71	Enlarged Plan - Bathroom Study Buildings A, B, and C	Gensler	-
A4.001	72	Wall Type Drawing_ESF-01-N Bldg A	Gensler	January 18, 2018
A4.002	73	Wall Type Drawing_ESF-01-N Bldg B	Gensler	January 18, 2018
A4.003	74	Wall Type Drawing_ESF-01-Ex Typ	Gensler	-
A4.004	75	Wall Type Drawing - Storefront By Tenant	Gensler	January 18, 2018
A4.005	76	Wall Type Drawing - Storefront By Brookfield	Gensler	January 18, 2018
A4.006	77	Wall Type Drawing - Lobby By Brookfield	Gensler	-



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A5.001	78	Elevator Lobby Enlarged Plan	Gensler	-
A8.001	79	Restaurant Pavilion Enlarged Parking Level B1 Plan	Gensler	January 18, 2018
A8.002	80	Restaurant Pavilion Enlarged Ground Floor Plan	Gensler	January 18, 2018
A8.003	81	Restaurant Pavilion Enlarged 2nd Floor Plan	Gensler	January 18, 2018
A8.201	82	Restaurant Pavilion Elevations	Gensler	January 18, 2018
A8.301	83	Restaurant Pavilion Sections	Gensler	January 18, 2018
Structural				
S1.201	84	Basement 3 Foundation Plan	Nabih Youssef	January 18, 2018
S1.202	85	Basement 2 Framing Plan	Nabih Youssef	January 18, 2018
S1.203	86	Basement 1 Framing Plan	Nabih Youssef	January 18, 2018
S1.204	87	Ground Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.205	88	2nd Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.206	89	3rd Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.207	90	4th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.208	91	5th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.209	92	6th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.210	93	7th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.211	94	8th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.212	95	9th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.213	96	10th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.214	97	11th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.215	98	12th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.216	99	13th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.217	100	14th Floor Framing Plan	Nabih Youssef	January 18, 2018
S1.218	101	Roof Framing Plan	Nabih Youssef	January 18, 2018
S3.001	102	Grand Stair Ground Floor Enlarged Plan	Nabih Youssef	January 18, 2018
S3.002	103	Grand Stair 2nd Floor Enlarged Plan	Nabih Youssef	January 18, 2018
S5.13 S5.013	104	Typical New Elevator Lobby Enlarged Plan - Building A1	Nabih Youssef	January 18, 2018
S5.14 S5.014	105	Typical New Elevator Lobby Enlarged Plan - Building B	Nabih Youssef	January 18, 2018
S8.001	106	Retail Pavilion Basement 1 Enlarged Plan	Nabih Youssef	January 18, 2018
S8.04 S8.002	107	Retail Pavilion Ground Floor Enlarged Plan	Nabih Youssef	January 18, 2018
S8.02 S8.003	108	Retail Pavilion 2nd Floor Enlarged Plan	Nabih Youssef	January 18, 2018
S8.03 S8.004	109	Retail Pavilion Roof Enlarged Plan	Nabih Youssef	January 18, 2018
Mechanical				
M0.000	110	Mechanical Legend And Abbreviations	Glumac	January 18, 2018
M0.001	111	Basis of Design & Tabulated Data	Glumac	January 18, 2018
M0.002	112	Schedules	Glumac	January 18, 2018
M0.003	113	Schedules	Glumac	January 18, 2018
M0.004	114	Schedules	Glumac	January 18, 2018
M0.005	115	Schedules	Glumac	January 18, 2018
MD1.001	116	Demolition Mechanical Plan - Level B3	Glumac	January 18, 2018
MD1.002	117	Demolition Mechanical Plan - Level B2	Glumac	January 18, 2018
MD1.003	118	Demolition Mechanical Plan - Level B1	Glumac	January 18, 2018
MD1.004	119	Demolition Mechanical Plan - Ground Floor	Glumac	January 18, 2018
MD1.005	120	Demolition Mechanical Plan - 2nd Floor	Glumac	January 18, 2018
MD1.006	121	Demolition Mechanical Plan - 3rd Floor	Glumac	January 18, 2018
MD1.007	122	Demolition Mechanical Plan - 4th Floor	Glumac	January 18, 2018
MD1.008	123	Demolition Mechanical Plan - 5th Floor	Glumac	January 18, 2018
MD1.009	124	Demolition Mechanical Plan - 6th Floor	Glumac	January 18, 2018
MD1.010	125	Demolition Mechanical Plan - 7th Floor	Glumac	January 18, 2018
MD1.011	126	Demolition Mechanical Plan - 8th Floor	Glumac	January 18, 2018
MD1.012	127	Demolition Mechanical Plan - 9th Floor	Glumac	January 18, 2018
MD1.013	128	Demolition Mechanical Plan - 10th Floor	Glumac	January 18, 2018
MD1.014	129	Demolition Mechanical Plan - 11th Floor	Glumac	January 18, 2018
MD1.015	130	Demolition Mechanical Plan - 12th Floor	Glumac	January 18, 2018
MD1.016	131	Demolition Mechanical Plan - 13th Floor	Glumac	January 18, 2018
MD1.017	132	Demolition Mechanical Plan - 14th Floor	Glumac	January 18, 2018
MD1.018	133	Demolition Mechanical Plan - Roof	Glumac	January 18, 2018
M1.201	134	Mechanical Parking Plan Level B3	Glumac	January 18, 2018
M1.202	135	Mechanical Parking Plan Level B2	Glumac	January 18, 2018
M1.203	136	Mechanical Parking Plan Level B1	Glumac	January 18, 2018
M1.204	137	Mechanical Ground Floor Plan	Glumac	January 18, 2018
M1.205	138	Mechanical 2nd Floor Plan	Glumac	January 18, 2018
M1.206	139	Mechanical 3rd Floor Plan	Glumac	January 18, 2018
M1.207	140	Mechanical 4th Floor Plan	Glumac	January 18, 2018
M1.208	141	Mechanical 5th Floor Plan	Glumac	January 18, 2018
M1.209	142	Mechanical 6th Floor Plan	Glumac	January 18, 2018
M1.210	143	Mechanical 7th Floor Plan	Glumac	January 18, 2018
M1.211	144	Mechanical 8th Floor Plan	Glumac	January 18, 2018
M1.212	145	Mechanical 9th Floor Plan	Glumac	January 18, 2018
M1.213	146	Mechanical 10th Floor Plan	Glumac	January 18, 2018
M1.214	147	Mechanical 11th Floor Plan	Glumac	January 18, 2018
M1.215	148	Mechanical 12th Floor Plan	Glumac	January 18, 2018
M1.216	149	Mechanical 13th Floor Plan	Glumac	January 18, 2018
M1.217	150	Mechanical 14th Floor/Roof Plan	Glumac	January 18, 2018
M5.001	151	Building A Ductwork Riser Diagrams	Glumac	January 18, 2018
M5.002	152	Building B Ductwork Riser Diagrams	Glumac	January 18, 2018
M5.003	153	Building C Ductwork Riser Diagrams	Glumac	January 18, 2018
M5.004	154	Building A Riser Piping Diagram	Glumac	January 18, 2018
M5.005	155	Building B Riser Piping Diagram	Glumac	January 18, 2018
M5.006	156	Building C Riser Piping Diagram	Glumac	January 18, 2018
M9.001	157	Mechanical Details	Glumac	January 18, 2018



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M9.002	158	Mechanical Details	Glumac	January 18, 2018
Electrical				
E0.000	159	Electrical Legend and Abbreviations	Glumac	January 18, 2018
ED0.100	160	Demolition Single Line Diagram - Building A1	Glumac	January 18, 2018
ED0.101	161	Demolition Single Line Diagram - Building A2	Glumac	January 18, 2018
ED0.102	162	Demolition Single Line Diagram - Building B	Glumac	January 18, 2018
ED0.103	163	Demolition Single Line Diagram - Building C	Glumac	January 18, 2018
E0.100	164	Single Line Diagram - Building A1	Glumac	January 18, 2018
E0.101	165	Single Line Diagram - Building A2	Glumac	January 18, 2018
E0.102	166	Single Line Diagram - Building B	Glumac	January 18, 2018
E0.103	167	Single Line Diagram - Building C	Glumac	January 18, 2018
E0.104	168	Emergency Single Line Diagram Bldg. A1 & A2	Glumac	January 18, 2018
E0.105	169	Emergency Single Line Diagram Bldg. B & C	Glumac	January 18, 2018
ED1.001	170	Demolition Electrical Plan - Level B3	Glumac	January 18, 2018
ED1.002	171	Demolition Electrical Plan - Level B2	Glumac	January 18, 2018
ED1.003	172	Demolition Electrical Plan - Level B1	Glumac	January 18, 2018
ED1.004	173	Demolition Electrical Plan - Ground Floor	Glumac	January 18, 2018
ED1.005	174	Demolition Electrical Plan - 2nd Floor	Glumac	January 18, 2018
ED1.006	175	Demolition Electrical Plan - 3rd Floor	Glumac	January 18, 2018
ED1.007	176	Demolition Electrical Plan - 4th Floor	Glumac	January 18, 2018
ED1.008	177	Demolition Electrical Plan - 5th Floor	Glumac	January 18, 2018
ED1.009	178	Demolition Electrical Plan - 6th Floor	Glumac	January 18, 2018
ED1.010	179	Demolition Electrical Plan - 7th Floor	Glumac	January 18, 2018
ED1.011	180	Demolition Electrical Plan - 8th Floor	Glumac	January 18, 2018
ED1.012	181	Demolition Electrical Plan - 9th Floor	Glumac	January 18, 2018
ED1.013	182	Demolition Electrical Plan - 10th Floor	Glumac	January 18, 2018
ED1.014	183	Demolition Electrical Plan - 11th Floor	Glumac	January 18, 2018
ED1.015	184	Demolition Electrical Plan - 12th Floor	Glumac	January 18, 2018
ED1.016	185	Demolition Electrical Plan - 13th Floor	Glumac	January 18, 2018
ED1.017	186	Demolition Electrical Plan - 14th Floor	Glumac	January 18, 2018
E1.201	187	Electrical Parking Plan Level B3	Glumac	January 18, 2018
E1.202	188	Electrical Parking Plan Level B2	Glumac	January 18, 2018
E1.203	189	Electrical Parking Plan Level B1	Glumac	January 18, 2018
E1.204	190	Electrical Ground Floor Plan	Glumac	January 18, 2018
E1.205	191	Electrical 2nd Floor Plan	Glumac	January 18, 2018
E1.206	192	Electrical 3rd Floor Plan	Glumac	January 18, 2018
E1.207	193	Electrical 4th Floor Plan	Glumac	January 18, 2018
E1.208	194	Electrical 5th Floor Plan	Glumac	January 18, 2018
E1.209	195	Electrical 6th Floor Plan	Glumac	January 18, 2018
E1.210	196	Electrical 7th Floor Plan	Glumac	January 18, 2018
E1.211	197	Electrical 8th Floor Plan	Glumac	January 18, 2018
E1.212	198	Electrical 9th Floor Plan	Glumac	January 18, 2018
E1.213	199	Electrical 10th Floor Plan	Glumac	January 18, 2018
E1.214	200	Electrical 11th Floor Plan	Glumac	January 18, 2018
E1.215	201	Electrical 12th Floor Plan	Glumac	January 18, 2018
E1.216	202	Electrical 13th Floor Plan	Glumac	January 18, 2018
E1.217	203	Electrical 14th Floor/Roof Plan	Glumac	January 18, 2018
Plumbing				
P0.000	204	Plumbing Legend and Abbreviations	Glumac	January 18, 2018
P0.002	205	Plumbing Schedules	Glumac	January 18, 2018
PD1.001	206	Demolition Plumbing Plan - Level B3	Glumac	January 18, 2018
PD1.002	207	Demolition Plumbing Plan - Level B2	Glumac	January 18, 2018
PD1.003	208	Demolition Plumbing Plan - Level B1	Glumac	January 18, 2018
PD1.004	209	Demolition Plumbing Plan - 3rd Floor (Typ 3rd-13rd Floors)	Glumac	January 18, 2018
PD1.005	210	Demolition Plumbing Plan - 14th Floor	Glumac	January 18, 2018
P1.201	211	Plumbing Parking Plan Level B3	Glumac	January 18, 2018
P1.202	212	Plumbing Parking Plan Level B2	Glumac	January 18, 2018
P1.203	213	Plumbing Parking Plan Level B1	Glumac	January 18, 2018
P1.204	214	Plumbing Ground Floor Plan	Glumac	January 18, 2018
P1.205	215	Plumbing 3rd Floor (Typ 3-13) Plan	Glumac	January 18, 2018
P1.206	216	Plumbing 14th Floor/Roof Plan	Glumac	January 18, 2018



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Appendices

Sheet Number	Page Number of Attachment	Description	Prepared By	Document Date
Appendix 1 - Enclosure Systems				
1	1	Schematic Design Narrative California Market Center	Walter P Moore	January 18, 2018
2	2	Table of Contents	Walter P Moore	January 18, 2018
3	3	Executive Summary	Walter P Moore	January 18, 2018
4	4	Enclosure Systems	Walter P Moore	January 18, 2018
5	5	Enclosure Systems - EWS 01 N Curtain Wall at Office Level	Walter P Moore	January 18, 2018
6	6	Enclosure Systems - EWS 01 N Curtain Wall at Office Level	Walter P Moore	January 18, 2018
7	7	Enclosure Systems - EWS 01 N Curtain Wall at Office Level - Reactions to Main Structure	Walter P Moore	January 18, 2018
8	8	Enclosure Systems - EWS 01 N Curtain Wall at Office Level	Walter P Moore	January 18, 2018
9	9	Enclosure Systems - EWS 01 N - Unitized Wall - Sketches	Walter P Moore	January 18, 2018
10	10	Enclosure Systems - EWS 01 N - Window Wall - Sketches	Walter P Moore	January 18, 2018
11	11	Enclosure Systems - EWS 01 N - Stick Built - Sketches	Walter P Moore	January 18, 2018
12	12	Enclosure Systems - EWS 01 N Curtain Wall at Office Level	Walter P Moore	January 18, 2018
13	13	Enclosure Systems - EWS Alternates at Buildings A/B	Walter P Moore	January 18, 2018
14	14	Enclosure Systems - EWS Alternates at Buildings A/B	Walter P Moore	January 18, 2018
15	15	Enclosure Systems - Store Fronts (SF)	Walter P Moore	January 18, 2018
16	16	Enclosure Systems - Store Fronts (SF)	Walter P Moore	January 18, 2018
17	17	Enclosure Systems - Existing EWS / SF	Walter P Moore	January 18, 2018
18	18	Enclosure Repair Works - CMC Exterior Building Facades	Walter P Moore	January 18, 2018
19	19	Enclosure Repair Works - CMC Exterior Building A/B Facade	Walter P Moore	January 18, 2018
20	20	Enclosure Repair Works - CMC Interior Building A/B Facade	Walter P Moore	January 18, 2018
21	21	Enclosure Repair Works - CMC Exterior Building C Facade	Walter P Moore	January 18, 2018
22	22	Enclosure Repair Works - CMC Interior Building C Facade	Walter P Moore	January 18, 2018
23	23	Enclosure Repair Works - CMC Exterior Building Facades	Walter P Moore	January 18, 2018
24	24	Enclosure Performance Specification - General - Performance Requirements	Walter P Moore	January 18, 2018
25	25	Enclosure Performance Specification - General - Performance Requirements	Walter P Moore	January 18, 2018
26	26	Enclosure Performance Specification - General - Warranty / Durability	Walter P Moore	January 18, 2018
27	27	Enclosure Performance Specification - Products - Materials	Walter P Moore	January 18, 2018
28	28	Codes of Practice and Technical Guides	Walter P Moore	January 18, 2018
29	29	Appendix A - Mapped Elevations	Walter P Moore	January 18, 2018
30	30	Buildings A, B, & C - Elevations - External Wall Systems (EWS)	Walter P Moore	January 18, 2018
31	31	Buildings A, B, & C - Elevations - External Wall Systems (EWS)	Walter P Moore	January 18, 2018
32	32	Buildings A, B, & C - Elevations - External Wall Systems (EWS)	Walter P Moore	January 18, 2018
33	33	Buildings A, B, & C - Elevations - External Wall Systems (EWS)	Walter P Moore	January 18, 2018
34	34	Buildings A, B, & C - Elevations - Storefront	Walter P Moore	January 18, 2018
35	35	Buildings A, B, & C - Elevations - Storefront	Walter P Moore	January 18, 2018
36	36	Buildings A, B, & C - Elevations - Storefront	Walter P Moore	January 18, 2018
37	37	Buildings A, B, & C - Elevations - Storefront	Walter P Moore	January 18, 2018
38	38	Appendix B - Studies on Current Systems at Plaza Storefront Only	Walter P Moore	January 18, 2018
39	39	Building A & B - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
40	40	Building A & B - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
41	41	Building A & B - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
42	42	Building C - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
43	43	Building A & B - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
44	44	Building A & B - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
45	45	Building A & B - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
46	46	Building A & B - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
47	47	Building A & B - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
48	48	Building C - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
49	49	Building C - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
50	50	Building C - Actual Situation; Elevations - Storefront	Walter P Moore	January 18, 2018
51	51	Appendix C - Glazing Samples	Walter P Moore	January 18, 2018
52	52	Glazing Samples	Walter P Moore	January 18, 2018
53	53	Appendix D - EWS 01 N Curtain Wall Design	Walter P Moore	January 18, 2018
1	54	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
2	55	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
3	56	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
4	57	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
5	58	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
6	59	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
7	60	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
8	61	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
9	62	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
10	63	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
11	64	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
12	65	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
13	66	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
14	67	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
15	68	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
16	69	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
17	70	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
18	71	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
19	72	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
20	73	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
21	74	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
22	75	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
23	76	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
24	77	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
25	78	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
26	79	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
27	80	California Mart Buildings A & B Reclad	Walter P Moore	November 30, 2017
81	81	Appendix E - Facade Matrix	Walter P Moore	January 18, 2018



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82	82	Facade Matrix	Walter P Moore	January 18, 2018
83	83	Facade Matrix	Walter P Moore	January 18, 2018
84	84	Panel Matrix	Walter P Moore	January 18, 2018
85	85	Panel Matrix	Walter P Moore	January 18, 2018
86	86	Appendix F - Roofing & Waterproofing	Walter P Moore	January 18, 2018
SD.01	87	Roof Assemblies Plan	Walter P Moore	-
SD.02	88	Plaza Plan	Walter P Moore	-
SD.03	89	Landscape Information	Walter P Moore	-
SD.04	90	Roof @ 3rd Floor Ledge	Walter P Moore	-
SD.05	91	Roof Build-Up Assembly 1	Walter P Moore	-
SD.06	92	Roof Build-Up Assembly 2	Walter P Moore	-
SD.07	93	Waterproofing Build-Up Assembly 1	Walter P Moore	-
SD.08	94	Waterproofing Build-Up Assembly 2	Walter P Moore	-
Appendix 2 - Parking				
-	1	California Market Center Subterranean Parking Structure	Walter P Moore	January 18, 2018
2	2	Executive Summary	Walter P Moore	January 18, 2018
3	3	California Market Center - Parking Calculations	Walter P Moore	January 18, 2018
PSK-00	4	Parking Spaces & Area Summary	Walter P Moore	January 18, 2018
PSK-01	5	Existing Level B1	Walter P Moore	January 18, 2018
PSK-02	6	Existing Level B2	Walter P Moore	January 18, 2018
PSK-03	7	Existing Level B2	Walter P Moore	January 18, 2018
PSK-04.3	8	Option 3 (Approved) - Level B1	Walter P Moore	January 18, 2018
PSK-05	9	Option 3 (Approved) - Level B2	Walter P Moore	January 18, 2018
PSK-06	10	Option 3 (Approved) - Level B3	Walter P Moore	January 18, 2018
PSK-07	11	Vehicular Turn Study Level B1	Walter P Moore	January 18, 2018
PSK-10	12	Minimum Maintained Foot - Candle lighting	Walter P Moore	January 18, 2018
-	13	California Market Center Olympic Parking Structure	Walter P Moore	January 18, 2018
16	14	Executive Summary	Walter P Moore	January 18, 2018
17	15	California Market Center - Parking Calculations	Walter P Moore	January 18, 2018
PSK-00	16	Level B2	Walter P Moore	January 18, 2018
PSK-01	17	Level B2	Walter P Moore	January 18, 2018
PSK-02	18	Level B1	Walter P Moore	January 18, 2018
PSK-03	19	Level 1	Walter P Moore	January 18, 2018
PSK-04	20	Level 2	Walter P Moore	January 18, 2018
PSK-05	21	Levels 3, 4, & 5	Walter P Moore	January 18, 2018
PSK-06	22	Level 6th	Walter P Moore	January 18, 2018
PSK-07	23	Level 7th (Roof)	Walter P Moore	January 18, 2018
PSK-08	24	Proposed Striping Layout	Walter P Moore	January 18, 2018
PSK-09	25	Re-Use of Abandoned Street Level Retail Spaces	Walter P Moore	January 18, 2018
PSK-10	26	Pedestrian Protection at Elevator Lobby - Option 2	Walter P Moore	January 18, 2018
PSK-11	27	Pedestrian Protection at Elevator Lobby - Option 1	Walter P Moore	January 18, 2018
PSK-12	28	Minimum Maintained Foot - Candle lighting	Walter P Moore	January 18, 2018
Appendix 3 - MEP Narrative				
-	1	Schematic Design - MEP Design Narrative - Appendix 3	Glumac	December 15, 2017
-	2	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	December 07, 2017
2	3	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
3	4	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
4	5	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
5	6	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
6	7	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
7	8	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
8	9	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
9	10	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
10	11	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
11	12	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
12	13	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
13	14	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
14	15	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
15	16	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
16	17	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
17	18	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
18	19	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
19	20	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
20	21	Mechanical, Electrical & Plumbing Schematic Design Narrative	Glumac	-
Appendix 4 - Energy Compliance				
-	1	Schematic Design - Energy Compliance - Appendix 4	Glumac	December 15, 2017
-	2	Memorandum	Glumac	December 15, 2017
-	3	Title 24 Envelope Compliance Results	Glumac	-
-	4	Title 24 Envelope Compliance Results	Glumac	-
-	5	Title 24 Envelope Compliance Results	Glumac	-
-	6	Title 24 Envelope Compliance Results	Glumac	-
-	7	Title 24 Envelope Compliance Results	Glumac	-
-	8	Parametric Energy Analysis	Glumac	-
-	9	Energy Modeling Assumptions	Glumac	-



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Los Angeles, CA
Exhibit A - Contract Documents List

SCHEMATIC DESIGN - ADDENDUM #1

Appendices

Sheet Number	Page Number of Attachment	Description	Prepared By	Document Date
Appendix 5 - Vertical Transportation				
-	1	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	January 18, 2018
2	2	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
3	3	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
4	4	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
5	5	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
6	6	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
7	7	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
8	8	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
9	9	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
10	10	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
11	11	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
12	12	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
13	13	Office Building Concept Design and Vertical Transportation Analysis Report	VDA	September 27, 2017
A-1	14	Appendix A - Calmart Building A - Low-Rise	VDA	-
A-2	15	Calmart Building A - Low-Rise	VDA	-
A-3	16	Calmart Building A - Low-Rise	VDA	-
A-4	17	Calmart Building A - High-Rise	VDA	-
A-5	18	Calmart Building A - High-Rise	VDA	-
B-1	19	Appendix B - Calmart Building B - Low-Rise	VDA	-
B-2	20	Calmart Building B - Low-Rise	VDA	-
B-3	21	Calmart Building B - High-Rise	VDA	-
B-4	22	Calmart Building B - High-Rise	VDA	-
C-1	23	Appendix C - Calmart Building C - Existing Elevators to Serve Office Floors (L, 11-13) and (L, 12-13)	VDA	-
C-2	24	Appendix C - Calmart Building C - Existing Elevators to Serve Office Floors (L, 11-13) and (L, 12-13)	VDA	-
C-3	25	Calmart Building C - Mart Traffic - Analysis Chart - Concept Design Elevator Analysis Summary	VDA	-

SD Alternate Summary

Sheet Number	Page Number of Attachment	Description	Prepared By	Document Date
SD Alternate Summary				
A1.201	1	Parking Plan Level B3	Gensler	January 18, 2018
A1.202	2	Parking Plan Level B2	Gensler	January 18, 2018
A1.203	3	Parking Plan Level B1	Gensler	January 18, 2018
L1.001	4	Overall Landscape Plan	PB&Co	-
A1.204	5	Ground Floor Plan	Gensler	January 18, 2018
A1.205	6	2nd Floor Plan	Gensler	January 18, 2018
A1.205	7	2nd Floor Plan	Gensler	-
A1.206	8	3rd Floor Plan	Gensler	January 18, 2018
A1.207	9	4th Floor Plan	Gensler	January 18, 2018
A1.217	10	14th Floor/Roof Plan	Gensler	January 18, 2018
A2.001	11	North & South Elevations	Gensler	-
A2.002	12	East & West Elevations	Gensler	-

Exhibit P

Specifications

Refer to Exhibit O.

Exhibit Q

Indemnitees

(1) Calmart Sub I, LLC, Jamison California Market Center, L.P., BSREP II LA Mart Special GP LLC, Brookfield Properties Management (CA) Inc., and their respective affiliates, shareholders, members (including members of members), partners (including partners of partners), subsidiaries, and related entities, and each of their respective successors and assigns; and

(2) such other and further entities consistent with the types of entities and having similar relationships with Owner as the entities listed herein and as may be identified by the Owner to the Construction Manager in writing.

Exhibit R

CAL. CIV. CODE § 8132

CONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant: _____
Name of Customer: _____
Job Location: _____
Owner: _____
Through Date: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____
Amount of Check: \$ _____
Check Payable to: _____

Exceptions

This document does not affect any of the following:

- (1) Retentions.
- (2) Extras for which the claimant has not received payment.
- (3) The following progress payments for which the claimant has previously given conditional waiver and release but has not received payment:

Date(s) of waiver and release: _____

Amount(s) of unpaid progress payment(s): \$ _____

- (4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.
-

Signature

Claimant's Signature: _____
Claimant's Title: _____
Date of Signature: _____

Exhibit S

CAL. CIV. CODE § 8134

UNCONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant: _____
Name of Customer: _____
Job Location: _____
Owner: _____
Through Date: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has received the following progress payment:

\$ _____

Exceptions

This document does not affect any of the following:

- (1) Retentions.
 - (2) Extras for which the claimant has not received payment.
 - (3) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.
-

Signature

Claimant's Signature: _____
Claimant's Title: _____
Date of Signature: _____

Exhibit T

CAL. CIV. CODE § 8136
CONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant: _____
Name of Customer: _____
Job Location: _____
Owner: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____
Amount of Check: \$ _____
Check Payable to: _____

Exceptions

This document does not affect any of the following:

Disputed claims for extras in the amount of \$ _____

Signature

Claimant's Signature: _____
Claimant's Title: _____
Date of Signature: _____

Exhibit U

CAL. CIV. CODE § 8138

UNCONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant: _____
Name of Customer: _____
Job Location: _____
Owner: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

Exceptions

This document does not affect any of the following:

Disputed claims for extras in the amount of \$_____

Signature

Claimant's Signature: _____
Claimant's Title: _____
Date of Signature: _____

Exhibit V

Project Communications Program

Within sixty (60) days of the date of this Agreement, the Construction Manager shall provide a project communications program, which shall be prepared by the Construction Manager and approved by the Owner. Upon such approval, the Project Communications Program shall be attached hereto as Exhibit V.

Exhibit W

Closeout Schedule and Procedures

Within sixty (60) days of the date of this Agreement, the Construction Manager shall provide a projected Closeout Schedule and Procedures to the Owner for review and approval. Upon such approval, the Closeout Schedule and Procedures will be attached hereto as Exhibit W

Exhibit X

Subcontractor Warranty

WARRANTY FOR the Calmart Property Redevelopment, Los Angeles, California
 (“Project”)

The undersigned hereby warrants to Calmart Sub I, LLC (the “Owner”), the work which
 we have performed as part of the Project, described as follows:
 _____ (“Work”), for one (1) year, starting _____,
 terminating _____.

The undersigned agrees to repair or replace to the satisfaction of Construction Manager
 and the Owner any portion of the Work that may prove defective in workmanship or
 materials within that period, ordinary wear and tear and unusual abuse or neglect
 excepted, together with any Work or other parts of the Project which may be damaged or
 displaced in so doing.

All repairs or replacements shall have a warranty period equal to the original warranty
 period as herein stated, dated from the final acceptance of the repairs or replacement.

If the undersigned fails to comply with the requirements of this warranty within ten (10)
 business days after being notified in writing, the undersigned hereby authorizes
 Construction Manager and/or the Owner to proceed to have defects repaired and made
 good at the undersigned’s expense, and agrees to pay the reasonable and necessary costs
 and charges therefor immediately upon demand. Nothing herein shall limit any other
 obligation the undersigned may have, or any other right or remedy of Construction
 Manager or the Owner.

This warranty is assignable by the Owner to any affiliate of any of the Owner or to any
 party which acquires a fee, leasehold or mortgage interest in the Project.

Nothing herein shall be deemed to shorten any longer warranty required to be provided
 pursuant to the Contract Documents.

(Subcontractor’s Name)

(Signature of Subcontractor’s Officer)

(Typed Name and Title of Officer)

(Notary)

Exhibit Y

Form of Subcontractor's Award Letter

Exhibit Y - Subcontractor Award Letter

November 23, 2016

Project Name

Owner Address

Attn: Owner's Rep

Re: Project Name

Project No.

Bid Package No. XXX

Specific Trade - Recommendation of Award

Based on 65% CD Documents, dated May 25, 2016

Gentlemen:

Pursuant to Article ____, Section ____ of the GMP Agreement (the "Agreement") between Calmart Sub I, LLC (the "Owner") and Turner Construction Company (the "Construction Manager"), the Construction Manager is making this Recommendation of Award ("ROA") for Bid Package No. ____ to **Company Name**. ("Subcontractor"). All capitalized terms not otherwise defined in this ROA shall have the meaning ascribed thereto in the Agreement.

Scope of Work Description:

- Itemized general description...

The need to expedite this award is as itemized below:

- As applicable...

This ROA is based on our overall evaluation of the Total Base Bid submitted and the attached Supplemental Documentation. The Total Base Bid, summarized below, is based on the total of Items 1 through 4 and no Alternates. Attached is the Final Bid Leveling Sheet Comparison Spreadsheet that summarizes the overall pricing and proposals for all Bidders. Furthermore, the Total Base Bid has been compared to the most current GMP Estimate Line Item in the attached Bid to Budget Comparison Spreadsheet.

Total Base Bid (Including Bond Cost)

\$23,636,309

Components of Total Base Bid:

1.	Construction Phase Cost Proposal (Includes Leveling Adjust)	\$23,513,710
2.	Sales Tax	Included
3.	Insurance (W/C & GL Estimate for OCIP Provided By Developer)	Included
4.	100% Performance & Payment Bond	Subguard

Company Name is fully compliant with State of California Contractor's Licensing requirements. They have been assigned the applicable license number _____ which is active and current.

Exhibit Y - Subcontractor Award Letter

As contemplated by the Most Current GMP Estimate Update currently in progress, Construction Manager is discussing various Value Engineering opportunities and alternates with Subcontractor and will present any and all reasonable opportunities and alternates to the Owner for review and approval. Any opportunities and alternates approved prior to final approval of the GMP shall be included in the GMP, and any opportunities or alternates approved after approval of the GMP shall be incorporated into the Work in accordance with the terms and conditions of the Agreement. Any required formal adjustment to the Subcontract Agreement and associated GMP will be addressed in accordance with Contract Terms and Conditions.

If you have any questions regarding this ROA, please feel free to contact this office.

Turner Construction Company

Nino Adamo
Project Executive

Enclosed Documents:

Construction Manager Submitted Documents

Recommendation of Award Notice
Executive Bid Summary Comparison
Bid Package No.____ Leveling Sheet

APPROVED BY OWNER:

Owner approves this ROA, and Construction Manager is hereby authorized to enter into Contract Agreement with Subcontractor.
CALMART SUB I, LLC

By: _____
Name:
Title:

Exhibit Z

Specific Work Restrictions

California Market Center

110 East Ninth Street
LOS ANGELES, CA 90079



Tenant and Building Improvement Manual

June 2018 and subject to changes.

TABLE OF CONTENTS

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CMC

Tenant and Building Improvement Guidelines

The information contained herein for tenant and building improvement work performed at CMC is provided to assist tenants, general contractors, subcontractors, design engineers, architects and any other parties involved in completing tenant and building improvement work at CMC. It is the responsibility of the tenant and its general contractor to ensure adherence to these guidelines as well as any base building standard specifications not listed here. These guidelines are provided as an overview and are not intended to be a complete and comprehensive document. Any questions regarding these specifications should be addressed to the Construction Coordinator in the Property Management Office for clarification.

CMC
Property Management Office
110 East Ninth Street, Suite A 727
Los Angeles, CA 90079
Tel 213-630-3600, Fax 213-622-2482



SECTION 1

CMC - DIRECTORY

OWNER

Calmart Sub I, LLC
Brookfield Place
250 Vesey Street, 15 Floor
New York, NY 10281-1023

Cc:
c/o CMC
110 East Ninth Street,
Suite A727
Los Angeles, CA 90079
Tel: 213-630-3600, FAX 213-622-2482

Eric Kim, Assistant Property Manager
Tel: 213-630-1702

Normz Reforsado, Property Assistant
Tel: 213-630-3600

Darren Blan, Chief Building Engineer
Tel: 213- 330-3781

OWNER'S CONSTRUCTION COORDINATOR

Brookfield Office Properties-CMC
110 East Ninth Street,
Suite A727
Los Angeles, CA 90079

Nicole O'Hagen Sandoval
Director, Construction
Tel: 213-330-3688

OWNER'S ARCHITECT

Contact Brookfield Construction

ENGINEERING CONSULTANT (MECHANICAL, ELECTRICAL & PLUMBING, FIRE SPRINKLER)

GLUMAC
18200 Von Karman Avenue, #100
Irvine, CA 92612

STRUCTURAL ENGINEER

Nabih Youssef & Associates
550 South Hope Street, Suite 1700
Los Angeles, CA 90071

SECTION 2

CMC - Approved Contractor and Subcontractors

DESIGNATED

The following contractors MUST be used for additions or modifications in the specific trade listed below.

<u>TRADE</u>	<u>CONTRACTOR</u>	<u>CONTACT</u>	<u>PHONE #</u>
Demolition	Interior Removal Specialist	Ernie Herrera	323.357-6900 323.357-9400 fax
Stone Maintenance / Sealers	Stuart Dean	Tracy Van Veen	323.875.1927 323.454.4059 fax
Controls/Building Management	Siemens	Joe Wurzelbacher	714.816-1454 714-761-2134 fax
Elevators	Schindler	Melanie Lee	213-410-3108 818-336-3076 fax
Engineer – Structural	Nabih Youssef & Associates	Nabih Youssef	213.362.0707 213.688.3079
Fire/Life Safety	National Fail Safe	Tony Gauf	714-895-4543
HVAC Air Balance	Winaire, Inc.	Jim Windle	714.901.2747 714.901.2757 fax
Locksmith	Emerson Locksmith	Morrie Emerson	310.652.7224
Telecommunication	Summit Riser	Chris Adams	949.251.9266 949.251.9270 fax

Riser Management (Restricted from Minimum Point of Entry to Tenant's backboard).

PREFERRED

The following general contractors are preferred.

Construction Management Concepts	Doug Johnston	714.996.4100 dj@cmcinccg.com
Corporate Contractors, Inc.	Scott Hemphill	323.263.3664 Scotthemphill@corpcon.net
Interscape Construction Inc.	Stephen Russell	818.249.1324 srussell@interscapeconstruction.com
L. E. Waters	Dennis Valentine	323.935.7877 valentined@le-waters.com
Environmental Contracting Corp.	James Arakelian	213.620.8008 james@eccla.com
New Vision	Bret Howey	818.588.4777 bret@newvisioncontractors.com

PREFERRED

The following subcontractors are preferred for additions or modifications in the specific trade listed below.

<u>TRADE</u>	<u>CONTRACTOR</u>	<u>CONTACT</u>	<u>PHONE #</u>
Acoustical Ceiling	Eljay Acoustics	Steve Mowry	714.974.7171 714.637.9451 fax
	Grani Installation Inc.	Henry Uranga	714.898.0441 714.373.1381 fax
	Grey-Co Acoustical		661.252-8820
Drywall	Trendex Corp.	Bill Vincent	818.587.3300 818.610-3303fax
	Pacific Wall Systems	Darryl Wimberly	714.996.8500 714.996.8501fax
	Sharpe Interior Systems	Harry Smith	818.767.4474 818.504.9381 fax
Electrical	O'Bryant Electric Inc.	Steve O'Bryant	818.407.1986 818.407.0983 fax
	R&R Electric	Rick Alcantar	310.785.0288 310.785.0621 fax
	Morrow-Meadows Corp.	Ed Santos	213.617.7584 213.617.1744 fax
Fire Protection	Cosco	Robert Angel	310.767.4910 310.323.0761 fax
	Advance Fire Protection	Geoff Baum	562.691.0918 562.691.5482
	Scott Campbell	Scott Pettitt	323.582.5103 323.582.4370 fax

HVAC

ACCO	John Reuter	800.998.2226
Air Tec	Kurt Kredel	310.549.1698 310.549.8329 fax
CE Mechanical	Dave Tickenoff	909-548-0925
Allison Mechanical	Don Allison	909-478-5633

Plumbing

Tier One Plumbing	Jay Lusita	424-393-4022 310-289-2105 fax
Muir Chase Plumbing	Jay Chase	818.500.1940 818.500.0397 fax
Andersen Plumbing	Paul Andersen	909-599-5950

SECTION 3

CMC - Contractor Rules and Regulations

For the purpose of these Rules and Regulations, Contractor is defined as any person or entity contracted to provide or perform services on behalf of Owner or any Tenant of CMC, located at 110 East Ninth Street, Los Angeles, California, herein "Building". "Owner" or "Property Management Office" shall collectively include Calmart Sub I, LLC.

The Tenant's or Owner's Contractor involved in the Tenant or Building Improvement Work (the "Contractor") shall comply with these Rules and Regulations, as applicable. In addition, the Contractor shall incorporate these Regulations into each contract and subcontract it executes in connection with the Tenant or Building Improvement Work (the "Work"). In all cases, to the extent there are any inconsistencies between these Regulations and any other contract document(s), these Regulations shall govern.

It is understood and agreed by all parties that nothing contained in these Regulations shall in any way affect, modify or supersede any of the terms set forth in the Tenant's lease for space at the Building, including, without limitation, any indemnifications set forth therein. In addition, neither the Tenant nor the Owner of the Building will be responsible for any property belonging to Contractor, its employees, agents or subcontractors or of others associated in any way with the Work.

OWNER REVIEW / APPROVAL OF CONSTRUCTION SCOPE

A full set of construction plans will be provided to the Owner for review and approval prior to work start. Plans and specifications must be approved by the Owner prior to the commencement of any Work. All submittals and questions relating to construction should be forwarded to the Owner's Construction Coordinator.

Use of any non-building standard materials must be approved by Owner prior to installation.

No revisions or changes of any kind may be made to the Owner approved construction plans without prior written consent of the Property Management Office. Any proposed revisions or changes must be submitted to Property Management Office in the form of a change order for review and approval prior to commencement of such changes.

Any necessary alterations to HVAC equipment within or adjacent to the construction site requires prior approval and inspection by Owner.

Any equipment to be connected to the building's water system must be approved by the Owner.

A "kick off" meeting will be scheduled with the Owner's Construction Coordinator prior to start of construction to discuss guidelines, procedures, schedules, quality control and other items that are intended to make the job run well for all parties. Such meeting shall be attended by Tenant, Contractor, Architect (or space planner) and representatives from Management.

PRE-CONSTRUCTION REQUIREMENTS

Prior to the commencement of any on-site work, delivery of materials, equipment or personnel, Contractor will submit to Property Management Office the following:

- Signed acceptance of Contractor Rules and Regulations Agreement.
- Certificates of Insurance for the Contractor and all subcontractors evidencing the appropriate coverage as described in Attachment A or as appropriately designated by the Property Management Office.
- Safety Data Sheet ("SDS") information for all chemicals or products used on site as part of the Tenant Improvement Work. SDS information to comply with the Occupational Safety and Health Act ("OSHA") Hazard Communication Regulation.
- A complete set of construction drawings approved by the Property Management Office and by Los Angeles Department of Building and Safety.
- A job schedule of the work to be accomplished detailed by trade.
- The name and phone number (including emergency phone numbers) of personnel who are authorized to represent the Tenant and/or Contractor.
- A complete list of all proposed subcontractors and suppliers. The Property Management Office must approve all contractors and subcontractors prior to commencement of work.

PERMITS

All necessary permits and/or stamped construction drawings provided by the Los Angeles Department of Building and Safety shall be posted and available within the job premises throughout the duration of construction. Upon completion, drawings shall be returned to the Property Management Office for record keeping.

COMPLIANCE WITH LAW

Contractor shall comply with all applicable codes, laws, and regulations pertaining to the work of Contractor, including all safety and health regulations.

INSPECTION

The Owner shall have access to the Work regardless of its state, preparation and progress.

The Owner may require an inspection of all tie-ins and interfaces with the Building systems, to assure compliance with building standards, warranty protection and proper systems operations. Costs for such inspections will be paid by the Contractor.

WORKMAN CONDUCT

No abusive, obscene, or inappropriate action or language on the part of workers will be tolerated. It will be the responsibility of the Contractor to enforce this regulation on day to day basis. No music devices are allowed on the job site.

NO SMOKING POLICY

Contractor and its subcontractors shall not smoke in the Building.

SIGNAGE

Contractor shall not post identifying signage or advertising within the Building.

HOURS OF OPERATION / QUIET ENJOYMENT BY TENANTS

All work must be performed in such a manner and/or during such hours so as not to disrupt the business operations of any Tenants.

Any work that is in the opinion of the Owner is odoriferous or causes excessive noise must be performed outside of standard operating hours. Standard operating hours for the building are 7:00 AM to 6:00 PM Monday through Friday. Work to be performed outside of standard operating hours includes but is not limited to the following:

- A. Drilling, hammering, attaching power fasteners or cutting of the concrete floor slab.
- B. Drilling or cutting of any concrete structural member.
- C. Any work where machine noise or vibration may disrupt normal office procedures, in the sole judgment of Owner.
- D. All fire/life safety testing/programming which may affect other tenants.

All work performed outside standard business hours must be scheduled and approved by the Property Management Office (Phone 213-630-3600).

BUILDING ACCESS/USE

All contractor/subcontractor access to the site must be authorized prior to commencement of the work by the Property Management Office. General contractors are to coordinate access for their subcontractors/suppliers.

All contractors shall access the building through the loading dock. There will be no entering or exiting by contractors through the lobby level. (No equipment, tools, materials, etc. shall be transported through the lobby at any time.)

The Contractor and all subcontractors shall confine his/her use of the premises to the designated construction area(s)

All Contractor employees are to use the freight elevator when going to and from the construction floor(s).

At NO time shall the passenger elevators be used to move construction personnel, materials, equipment, tools or trash.

Door to all work areas, including mechanical and electrical closets, will remain closed. Propping doors open is

prohibited.

The service elevator vestibules are to be kept free of debris and equipment. Doors are to remain closed.

Access to Tenant Occupied Spaces. Should the Contractor require access to another tenant's occupied space within the Building, Contractor must submit an access request for approval to the Property Management Office at least 48 hours in advance of the requested access date. Request should include the following information: Type of work to be performed, a list of the subcontractors who will require access and whether they will require ceiling access, location in the space where the work will be performed and the length of time that they will be in the Tenant's space. All access will be scheduled at the Tenant's convenience. Building security may be required to be present whenever workmen are working in an occupied space. Costs for the security and/or engineering services are the responsibility of the Contractor.

Keys. If keys are required by Contractors, they must be checked out from the Engineer's Office located on Level 14 of the Building. NO key will be distributed if proper identification is not provided. Blocking or altering of locking mechanisms is not permitted.

ELEVATORS/LOADING DOCK – MATERIAL DELIVERIES

The freight elevator and loading dock hours are: Monday through Friday – 7:00 a.m. – 6:00 p.m.

The loading dock entrances is located on Los Angeles Street and Main Street.

DOCK SIZE LIMITATION: Please contact the Property Management Office to coordinate access.

The dock is for loading and unloading only. Parking on the dock more than 30 minutes is not allowed without special permission from the Office of the Building.

Daytime deliveries are limited to two elevator loads. Elevators and loading dock space are not reserved for daytime deliveries.

ALL MOVE-INS/OUTS OR LARGE-SCALE DELIVERIES (more than two elevator loads) MUST BE PERFORMED AFTER HOURS. They may be scheduled at any time on weekends and/or on weekdays after 6:00 pm and require scheduling in advance with the Property Management Office (213) 630-3600.

Two freight elevators, located in the middle of the service corridor, service each floor. Access to the freight elevators for delivery of furniture/office supplies or other deliveries that require use of carts or dollies is accessible via the loading dock. Please contact Property Management office for elevator dimensions.

Situations may arise, from time to time, when the Contractor may be required to share the freight elevator with cleaning personnel, Tenants, etc.

PARKING

On-site parking is available. Validations are not provided by the Owner except by prior arrangements made with the Property Management Office.

WATER AND ELECTRICITY DURING CONSTRUCTION

Sources of water and electricity will be furnished to the Contractor without cost, in reasonable quantities for use in lighting, for portable power tools, drinking water, water for testing and other such uses during construction. The Contractor shall make all connections, furnish any necessary extensions and remove same upon completion of work. All extensions and connections will be installed to prevent trip and other hazards and be maintained within the construction area(s).

RESTROOM AND TELEPHONE FACILITIES

One (1) Men's and one (1) Women's restroom will be opened, stocked and available. The contractor is responsible to return these restrooms in clean and operable conditions. Failure to do so will result in the contractor being charged for clean-up by the Owner. At NO time shall the Contractor or any of his/her employees or subcontractors use a Tenant's Restrooms or telephone. Food shall be consumed in designated areas only.

PROTECTION

The Contractor shall carefully protect all walls, carpets, floors, furniture and fixtures and shall repair or replace damaged property without cost to Owner.

The protection of building corridors, doors, stairwells, elevators, floor covering, public areas, lobbies and service areas with cardboard, plywood or other pre-approved materials by the Property Management Office is the responsibility and the expense of the tenant and/or their contractor/vendors.

Construction areas should always be separated from occupied Tenant spaces by walls or visqueen in order to keep dust to a minimum, while maintaining damp walk off mats. Block off supply and return grilles, diffusers and ducts to keep dust from entering into the building's air system. Installation of 95% pleated construction filters and replacement of 55% pleated filter at job closure.

All doors to tenant suites shall remain closed unless transporting heavy equipment or debris to or from the construction area. Contractor will be responsible for damage caused by Contractor or its subcontractors to the Building. Any damage shall be promptly repaired to Owner's satisfaction at the sole cost of the Contractor.

Contractor will not store construction materials in common areas.

Indoor Air Quality: During construction Contractor shall meet or exceed the recommended approaches of the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 1995, Chapter 3. Installation of pre-filter media (3/4 ounce) is required to be installed on the return transfer boots and air handler filter bank prior to demolition. The pre-filter media must be maintained to limit contaminating the existing air handler filter bank. Also, filters are required to be installed on all Fan Powered Terminal Units (FPTU's) within the construction area. All filters are to be maintained throughout the entire process but must be removed and disposed of one day prior to the beginning of final inspections.

CLEAN-UP

Contractor shall keep the site free from accumulation of waste materials, debris or rubbish. The Contractor shall leave the site respectably clean at the completion of each work day. Failure to maintain the premises "broom clean" during construction shall result in Owner withholding clean-up expenses from final billing.

All areas within the construction site that are visible from the floor common area shall remain clean and free of debris. Access to the loading dock and pathways to elevators shall not be obstructed.

Contractor shall not use any Building drains to wash out grout or other materials. Contractor shall be responsible for repairing plugged drains.

Contractor shall in preparation for substantial completion or occupancy by Tenant, perform final cleaning of all areas impacted by Contractor's work.

TRASH REMOVAL

It is the responsibility of the Tenant and/or its contractor / vendor to dispose of debris immediately, including packing materials. The Building's trash containers may not be used for disposing such materials.

Existing materials removed and not used in the construction, except as directed by the Owner, shall be disposed of by the Contractor as waste.

Diversion Reporting. All materials must be recycled with a minimum of 75% diversion. Diversion reporting must be supplied to the Owner at completion of demolition and proof of diversion should be provided by commodity.

Toxic, Hazardous Waste Disposal: Handling and disposal of any materials as required by Federal, State and Local codes and statutes. The property management office will be notified when any substance classified as toxic, or hazardous is generated. Copies of the bill of lading or freight bill with the transporter's E.P.A. number will be delivered to the property management office to confirm that all hazardous substances are disposed of properly.

ADDITIONAL SERVICE CHARGES

When work is performed by Contractor or a subcontractor, charges will apply for additional services performed by Owner that may include, but are not limited to:

- Overtime loading dock or elevator usage that requires the assistance of a security officer.
- Utility usage for construction activities beyond standard power and water readily available in the Building.
- Clean-up of elevators and public spaces as required during construction activity. Contractor to provide the usual protection of existing improvements, and exercise care and good judgment.
- Additional security / engineering services.

CUTTING/CORING/PATCHING

Core drilling shall be restricted to off-hours and may require x-raying for penetrations if deemed necessary by Property Manager. Property Manager shall be notified for schedule and approval.

DUST, ODOR AND HAZARDOUS MATERIALS

The Contractor shall notify the Property Management Office (Phone 213-630-3600) prior to commencement of construction.

Additional ventilation equipment may be required by Owner to be installed involving removal/reinstallation of exterior glass at Contractor's cost.

Any smoke detectors located within the construction area shall be covered. Failure to notify the Property Management Office will result in the Contractor absorbing the costs. Violation of this will result in the appropriate contractor's removal from the Owner's qualified bid list. Any expense incurred by the Owner because of the Contractor's actions will be billed to tenant or Contractor. All smoke detectors shall be uncovered at the end of each work day.

Safety Data Sheets (SDS) for all glues, paint, stain, carpet or any hazardous materials or any products that produce volatile organic compounds (VOC) must be supplied to the Property Management Office before the product is used. It is the responsibility of the Contractor to provide these SDS for any product used at the construction site. VOC limits shall be compliant with South Coast Air Quality District Rule #1168 and LEED EQ credit 4.1 requirements.

Installation of new carpet may require after hours installation and requires that floor HVAC system, outside air and toilet exhaust be operated a minimum of 24 hours or until odor from installation has dissipated. Contractor or Tenant must make this request in advance and shall be billed accordingly.

PAINTING

Paints shall be compliant with LEED EQ credit 4.2 requirements.

Spray painting is not allowed in the Building, even if it is performed after hours, without prior written approval of Owner.

No staining or varnishing is permitted in the Building without prior written approval of Owner. Water based stains or varnishes are preferred.

All painting is to be performed after hours with latex/water soluble paints only.

Odorous materials are not to be left open anywhere in the Building.

ABANDONED EQUIPMENT AND CABLING

All abandoned/vacated equipment, ductwork, piping, conduit and data/telecommunication cabling shall be removed from the ceiling plenum unless otherwise specified by Owner. Any further removal requirements as directed by the Building will be completed at Tenant's and/or Contractor's expense.

ELECTRICAL / TELEPHONE ROOMS

Tenant equipment may not be installed in building electrical / telephone rooms.

Access to electrical & telephone equipment rooms will be arranged through the Property Management Office.

Any use of telephone room chase way must be approved in advance by the Property Management Office and coordinated through the building's riser management contractor. Vertical cabling in the building is a restricted trade.

Doors to electrical and telephone equipment rooms may not be propped or blocked open in any way.

All electrical rooms on construction floors are to be kept clean, locked and secured.

These rooms cannot be used as storage for tools or supplies. At the end of each day, all garbage and wire remnants are to be removed and a clear pathway maintained to all panels.

All panels are to be replaced and properly labeled upon completion of work. All panel schedules are to be updated and affixed to the respective panels.

All penetrations through floors, walls and ceilings will be properly fire caulked upon completion.

HOT WORK, SPRINKLER SHUT DOWN & DRAIN DOWN PROCEDURES

Contractor must comply with the Building "hot work" procedures for any soldering, welding, cutting, etc. Note that this work cannot be performed between the hours of 6:00 a.m. and 7:00 p.m. Monday through Friday and must be scheduled through the Building Engineering Department. Building Engineering will provide forms and procedures for this work.

All work performed on fire sprinklers and/or fire standpipes must be scheduled with The Building Chief Engineer at least 24 hours in advance.

Contractor will coordinate re-filling the lines with the Building's engineers.

BUILDING SYSTEMS - GENERAL

All Life/Safety Systems for the Building are to be maintained, and all Tenant work is to be properly interfaced with and connected to the Base Building systems as required by code, or by Owner. All work is to be performed in such a way as to protect all Base Building operations and warranties. Any required disconnection of base building systems including but not limited to safety devices, sprinklers, electrical circuits, air-handling units and water supply requires notification to the Property Management Office at least 48 hours in advance. Devices must be put back in service each day prior to construction personnel leaving the premises.

1. ELECTRICAL

- A. Contractor shall update panel board directory as required. Contractor shall update all new circuitry with building approved labeling.
- B. Obtain prior approval of Owner for any bus tap/plug scheduled to be made to the Building's electrical distribution system.
- C. All rerouted power wiring shall be run in a manner to keep downtime and interference to a minimum. Shutdowns shall be approved by Owner prior to commencement of work at least 72 hours in advance. The Building Engineers must be notified prior to the disruption of power or circuits to any Base Building Equipment at least 72 hours in advance.
- D. Replace any lamps damaged or inoperable during relocation or installation. The louver surface shall be cleaned and free of dust at the completion of the project.
- E. To the extent possible, maintain light fixture switching during construction so that lights may be turned off at the end of each day.

2. LIGHTING CONTROL SYSTEM (Dial Up Lighting System)

- A. Prior to demolition of tenant space, the Electrical Contractor in conjunction with a Building Engineer, must verify that the Lighting Control System is in proper working order. The Electrical Contractor will be responsible for any repairs required because of their work on the Lighting Control System.

3. FIRE PREVENTION & LIFE SAFETY SYSTEM

- A. All programming to the Life Safety System must be made by National Fire Alarm. The Building Engineers must be notified prior to work being performed. Devices that are accidentally or otherwise made inoperative must be repaired or replaced immediately.
- B. The addition, removal, change, relocation or other alteration must be reflected at the fire command station through programming and nomenclature changes at the Tenant's expense.
- C. All Tenant supplemental air conditioning units (FCU's, etc.) and exhaust fans must have their own duct smoke detectors. All cooling units, regardless of size, must be tied into the Building's HVAC Management System. This information should be included on the mechanical drawings.
- D. Life Safety System equipment must remain in operation.
- E. No pre-action of other stand-alone tenant life safety system may be connected to the Building Life Safety Management System without said system having been approved by the City of Los Angeles or Bureau of Building Inspection. Copies of such approval must be provided to Owner before tie-in authorization is given. Any system that is connected to the Building HVAC Management and/or Life Safety System must reflect the following three (3) conditions:

- Water Flow Alarm.
- System Trouble
- Isolation Valve Tamper

- F. The Tenant or Tenant's Contractor is responsible for filing and obtaining all approvals, inspections and tests relative to stand alone life safety systems, security access systems, or other materials/systems requiring local law compliance. Copies of all approvals for these systems must be provided to Owner before connecting authorization is given.
- G. The maintenance of any subsystem installed for Tenant is the direct responsibility of Tenant.

4. **MECHANICAL**

- A. Tenant's contractor may not make any alterations to any Base Building Air-Handling Unit ("AHU") or control systems.
- B. All thermistors and associated cable to the fan powered terminal units must be removed from the construction premises prior to demolition work at site and reinstalled after work is completed. All thermistors located on curtain wall columns must have insulated backplates.
- C. The AHU's and HVAC equipment will be operated by the Building Engineers.
- D. Provide and coordinate installation of access panels required for maintenance and inspection of all equipment. Provide access panels for all items of equipment. Coordinate exact location with architect and identify on "as-built" drawings.
- E. Piping added to the system, and any system piping that has been opened, must be flushed thoroughly before being exposed to the system. It is the responsibility of the Contractor to coordinate this work with the Building's Engineer. Any costs related to work for which piping is not flushed and which results in the contamination of the Building water systems will be charged to Tenant or Tenant's Contractor. The cost of materials and labor to flush the water system and add water treatment chemicals will be the responsibility of the Tenant's Contractor.
- F. Pressure test each system of piping and ductwork in accordance with recognized industry standards.
- G. It is the responsibility of the Tenant's Contractor to ensure that the HVAC and water systems serving all areas within the Leased Premises are in proper balance following the completion of the Tenant Improvement Work.
- H. Supplemental AC units are to be metered for electrical and condenser water use. Refer to Building Standard Finishes / Design Criteria information in this manual.

CONSTRUCTION CLOSE-OUT REQUIREMENTS

The following information is required by the Owner upon completion of construction in the Building:

Drawings:

- As-built plans: Two copies of full size drawings, one scanned set of plans in Adobe Acrobat and one set in AutoCAD compatible with Landlord's CAD system, with industry standard layering. As built plans to include all architectural, mechanical, electrical & plumbing fire/life safety and structural. (if applicable)
- A copy of the permit set of drawings with City of Los Angeles, Department of Building and Safety stamp of approval. **Provide one copy in Adobe Acrobat and two hard copies.**

Construction Information Binder: Provide one copy in Adobe Acrobat and two hard copies in a neatly bound package of the following:

- Table of contents.
- Original permit/inspections card with all final inspections/signatures.
- Certificate of Occupancy (if applicable).
- Name(s) of general contractor, all subcontractors with appropriate contact, address and telephone number. Indicate area/trade of work performed for future reference.
- General contractor's and all subcontractor's (and manufacturer's) warranties. **Contractors shall provide warranties for all work and materials for a minimum of one (1) year from project acceptance and completion.**
- Final HVAC air balance report for the space performed by designated contractor for the building.
- All operation and maintenance manuals for specific HVAC units or other equipment as applicable and copies of required maintenance schedules/agreements for such equipment (e.g. HVAC, water filtration or other).
- A copy of the punch list for the space which is signed by the tenant's representative and architect, indicating final acceptance of the space.

Note: Retainage may be withheld from Tenant's Improvement Allowance (if applicable). Therefore, general contractor's final payment may not be released until the above documents are received and accepted by the Owner.

POSTING OF RULES & REGULATIONS

A copy of these Rules & Regulations must be available on the job site. Subcontractors are required to sign Rules & Regulations. It is the Contractor's responsibility to instruct personnel and all subcontractors to adhere to Rules & Regulations.

FAILURE TO PERFORM

Failure to perform work in a timely manner consistent with the above stated Contractor Rules and Regulations may result in immediate work stoppage by Owner. Owner shall have no liability for any costs or expenses incurred by Contractor or any subcontractors in connection with or as result of such work stoppage.

CHANGES TO RULES

The Contractor Rules and Regulations may be amended or revised at any time by the Owner. The amended or revised Contractor Rules and Regulations shall become effective upon delivery to Contractor, Architect and/or Tenant.

ACKNOWLEDGED AND ACCEPTED:

Company:_____

Signature:_____

Print Name:_____

Title:_____

Date:_____

Attachments: Attachment A – Certificate of Insurance Requirements

ATTACHMENT A

CMC - CERTIFICATE OF INSURANCE REQUIREMENTS

Carrier: Rated "A-VIII" or higher by A.M. Best

Additional Insureds: Brookfield Properties Management (CA) Inc., BSREP II LA Mart Special GP LLC, Jamison California Market Center, L.P., and their respective affiliates, shareholders, members (including members of members), partners (including partners of partners), subsidiaries, and related entities, and each of their respective successors and assigns, and Parlex 2 Finance, LLC (as lender) and its respective successors and assigns.

Certificate Holder: Calmart Sub I, LLC
110 East 9th Street
Los Angeles, CA 90079

Contractor is to guarantee that it and all subcontractors always carry proper insurance coverage always. Contractor shall also obtain proper Certification of Insurance from all subcontractors and provide Owner with copies of same upon commencement of construction.

Note that for typical tenant improvement projects major trades (Mechanical, Electrical and Plumbing) subcontracting under a general contractor, who is carrying an umbrella liability of \$10 million, may provide coverage with \$5 million umbrella liability in lieu of \$10 million as required when they are contracting directly with Owner and/or Tenant.

Coverage requirements vary per vendor type: Some vendors have special requirements. Please see below:

- | | |
|-------------|---|
| Vendor Type | <ul style="list-style-type: none"> ▪ General Construction: Tenant Improvement or base building work performed by General Contractors or MEP Prime Contractors. (Interior work only. No work affecting the building structure.) ▪ Environmental remediation including, but not limited to, asbestos, lead paint and underground storage. |
|-------------|---|

Policy	Limit	Amount
General Liability	per occurrence	\$1,000,000
General Liability	Aggregate	\$2,000,000
General Liability	products/completed ops	\$2,000,000
Worker's Compensation		Statutory
Employers Liability	Bodily Injury/Each Accident	\$1,000,000
Employers Liability	Bodily Injury by Disease per employee	\$1,000,000
Employers Liability	Bodily Injury Disease Aggregate	\$1,000,000
Automobile Liability	Combined Single Limit (CSL) per accident for owned, non-owned & hired autos	\$1,000,000
Umbrella	Umbrella per occurrence and aggregate	\$10,000,000

- | | |
|-------------|--|
| Vendor Type | <ul style="list-style-type: none"> ▪ Tenant Improvement or base building work exclusive of work performed by General Contractors or MEP Prime Contractors. (Interior work only. No work affecting the building structure.) ▪ Movers ▪ Overhead garage door maintenance ▪ Information system installation and maintenance services ▪ Landscaping services (no heavy equipment and/or use of chemicals) ▪ Carpet cleaning services ▪ Sign installation (contemplates small signage with little or no possibility of bodily injury or significant property damage) ▪ Access control system maintenance ▪ Locksmith |
|-------------|--|

Policy	Limit	Amount
General Liability	per occurrence	\$1,000,000
General Liability	Aggregate	\$2,000,000
General Liability	products/completed ops	\$2,000,000

Worker's Compensation		Statutory
Employers Liability	Bodily Injury/Each Accident	\$1,000,000
Employers Liability	Bodily Injury by Disease per employee	\$1,000,000
Employers Liability	Bodily Injury Disease Aggregate	\$1,000,000
Automobile Liability	Combined Single Limit (CSL) per accident for owned, non-owned & hired autos	\$1,000,000
Umbrella	Umbrella per occurrence and aggregate	\$2,000,000

Vendor Type	<ul style="list-style-type: none"> ▪ Elevator maintenance ▪ Elevator consultants ▪ Window washing and rig maintenance ▪ Life Safety maintenance ▪ Fire Sprinkler Systems ▪ Central safety monitors ▪ Roof maintenance ▪ HVAC maintenance ▪ Water treatment ▪ Landscaping services (use of heavy equipment and/or chemicals) ▪ Sign installation (contemplates large signage where possibility of bodily injury or significant property damage exists) ▪ Parking facility consultants ▪ MEP Engineering consultants, Architects/Architectural consultants ▪ Structural Engineering consultants
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Policy	Limit	Amount
General Liability	per occurrence	\$1,000,000
General Liability	Aggregate	\$2,000,000
General Liability	products/completed ops	\$2,000,000
Worker's Compensation		Statutory
Employers Liability	Bodily Injury/Each Accident	\$1,000,000
Employers Liability	Bodily Injury by Disease per employee	\$1,000,000
Employers Liability	Bodily Injury Disease Aggregate	\$1,000,000
Automobile Liability	Combined Single Limit (CSL) per accident for owned, non-owned & hired autos	\$1,000,000
Umbrella	Umbrella per occurrence and aggregate	\$5,000,000
Vendor Type	General Construction: Exterior work or work affecting the building structure.	

Policy	Limit	Amount
General Liability	per occurrence	\$1,000,000
General Liability	Aggregate	\$2,000,000
General Liability	products/completed ops	\$2,000,000
Worker's Compensation		Statutory
Employers Liability	Bodily Injury/Each Accident	\$1,000,000
Employers Liability	Bodily Injury by Disease per employee	\$1,000,000
Employers Liability	Bodily Injury Disease Aggregate	\$1,000,000
Automobile Liability	Combined Single Limit (CSL) per accident for owned, non-owned & hired autos	\$1,000,000
Umbrella	Umbrella per occurrence and aggregate	\$10,000,000 - \$25,000,000

SPECIAL REQUIREMENTS:

Special Requirement 1	(e.g. landscaping with the use of chemicals, water treatment contracts, etc.): a separate pollution liability policy should be required with minimum limits of \$5,000,000 per occurrence / aggregate. ("Claims-made" coverage acceptable with 3 year extended reporting and coverage)
CONTRACTORS THAT PRESENT POLLUTION EXPOSURE	

Special Requirement 2	(e.g. hydraulic elevators, environmental contracts, construction projects where
-----------------------	---

CONTRACTORS THAT PRESENT
POLLUTION EXPOSURE **asbestos, lead paint, etc. is present): a separate
pollution liability policy should be required with
minimum limits of \$5,000,000 per
occurrence/aggregate. ("Claims-made" coverage
acceptable with 3 year extended reporting and
coverage)**

Special Requirement
LOCKSMITH **\$200,000 Fidelity Bond, naming Building Owner
as obligee.**

Special Requirement
MOVERS **Bailee's floater to the full replacement cost of
property in care, custody and control of mover**

**The above requirements relate to vendors related to construction. For insurance requirements for vendors
providing other services to the building and/or tenants please contact the Office of Building Management.**

SECTION 4

CMC - Building Standard Finishes / Design Criteria

**** DRAFT – TO BE UPDATED ****

1. COMMON AREA FINISHES

- a. Elevator Lobbies - Passenger
 - i. Flooring
 - ii. Walls/Base
 - iii. Ceiling
 - iv. Elevator Doors and Jambs
- b. Elevator Lobby Service
 - i. Flooring
 - ii. Base
 - iii. Walls
 - iv. Ceiling
 - v. Hoist way Doors and Jambs
- c. Restrooms
 - i. Flooring
 - ii. Walls
 - iii. Ceiling
 - iv. Counter
 - v. Partitions / Screen
- d. Corridors
- e. Floors
 - i. Base
 - ii. Walls
 - iii. Ceiling
 - iv. Doors
 - v. Floor Stop
 - vi. Wall Stop
 - vii. Closer
 - viii. Frame
 - ix. Hardware
- f. Stairwells
 - i. Floors
 - ii. Base
 - iii. Walls
 - iv. Handrails
 - v. Frames
 - vi. Safety Stripe

2. BUILDING STANDARD MATERIALS AND FINISHES FOR TENANT AREAS

- a. Partitions
- b. Doors
 - i. Interior Doors
 - ii. Floor Stop
 - iii. Wall Stop
 - iv. Closer
 - v. Frame
 - vi. Hardware
- c. Paint
 - i. Wall/Ceilings
 - ii. Door Frames

- iii. Window Mullion
- iv. Flooring Carpet
- v. Resilient Tile
- vi. Base
- d. Electrical
 - i. Receptacle
 - ii. Telephone Wall Outlet
- e. Lighting
 - i. Light Fixtures
 - ii. Lamp
 - iii. Exit Light
- f. Light Switch
 - i. Perimeter Office
 - ii. Perimeter Office or Open Areas
 - iii. Interior Office
 - iv. Other
- g. Ceiling
- h. Sprinkler Heads
- i. Appliances
- j. Window Coverings
- k. HVAC
 - i. All work to meet Title 24.
 - ii. Lighting (Typical Office Space)
 - iii. Receptacles
 - iv. Occupancy
 - v. Air Load Factors:
 - vi. Outside Air:
 - vii. Minimum Air Volume/sq. ft. in the Tenant Space
 - viii. Ductwork Design Criteria
 - ix. Chilled Water Distribution
 - x. Temperature Controls
 - xi. Ventilation and Exhaust
 - xii. Stair Pressurization Ventilation
 - xiii. Smoke Exhaust System
- l. Electrical
 - i. Lighting
 - ii. Receptacles
- m. Fire / Life Safety
- n. Telephone/Data
- o. Plumbing
- p. Fire Protection System

Exhibit AA

LEED Requirements

LEEDv4 for Core + Shell
Brookfield CMC
110 E. 9th Street, Los Angeles CA
6/1/2018

Project Goal:
Y to 7Y Points:
This corresponds to:

Gold
81
Platinum

60	21	11	18	Total Points	Certified: 40-49 pts (46 Recommended)	Silver: 50-59 pts (56 Recommended)	Gold: 60-79 (66 Recommended)	Platinum: 80+ (86 Recommended)
Y	7Y	TN	N					
1				Integrative Process	1 point	Team		
1				Credit 1 Integrative Process	1	C MEP		
Y	7Y	TN	N					
17			3	Location + Transportation	20 points	Team		
			16	Credit 1 LEED for Neighborhood Development Location	16	C LD		
2				Credit 2 Sensitive Land Protection	2	C A		
3				Credit 3 High Priority Site	3	CV A		
6				Credit 4 Surrounding Density + Diverse Uses	6	LD		
6				Credit 5 Access to Quality Transit	6	LD		
			1	Credit 6 Bicycle Facilities	1			
			1	Credit 7 Reduced Parking Footprint	1			
1				Credit 8 Green Vehicles	1			
Y	7Y	TN	N					
4	4		3	Sustainable Sites	11 points	Team		
Y				Preq 1 Construction Activity Pollution Prevention	Req	CV GC		
1				Credit 1 Site Assessment	1	CV		
			2	Credit 2 Site Development - Protect or Restore Habitat	2	CV		
			1	Credit 3 Open Space	1	CV LA		
			3	Credit 4 Rainwater Management	3	CV LA		
2				Credit 5 Heat Island Reduction	2	A LA		
			1	Credit 6 Light Pollution Reduction	1	LC MEP		
1				Credit 7 Tenant Design and Construction Guidelines	1	C		
Y	7Y	TN	N					
6	2		3	Water Efficiency	11 points	Team		
Y				Preq 1 Outdoor Water Use Reduction	Required	LA		
Y				Preq 2 Indoor Water Use Reduction	Required	MEP		
Y				Preq 3 Building-level Water Metering	Required	MEP		
1			1	Credit 1 Outdoor Water Use Reduction	2	LA		
3	2		1	Credit 2 Indoor Water Use Reduction	6	MEP		
	2			Credit 3 Cooling Tower Water Use	2	MEP		
			1	Credit 4 Water Metering	1	MEP		
Y	7Y	TN	N					
16	8		3	Energy + Atmosphere	33 points	Team		
Y				Preq 1 Fundamental Commissioning + Verification	Required	CX MEP		
Y				Preq 2 Minimum Energy Performance	Required	MEP		
Y				Preq 3 Building-level Energy Metering	Required	MEP		
Y				Preq 4 Fundamental Refrigerant Management	Required	MEP		
3			3	Credit 1 Enhanced Commissioning	6	CX MEP		
10	4	3	3	Credit 2 Optimize Energy Performance	18	MEP		
			1	Credit 3 Advanced Energy Metering	1	MEP		
			2	Credit 4 Demand Response	2	C MEP		
			3	Credit 5 Renewable Energy Production	3	TC MEP		
	1			Credit 6 Enhanced Refrigerant Management	1	MEP		
2				Credit 7 Green Power + Carbon Offsets	2	TC LD		
Y	7Y	TN	N					
4	2		6	Materials + Resources	14 Points	Team		
Y				Preq 1 Storage + Collection of Recyclables	Required	A LD		
Y				Preq 2 Construction and Demolition Waste Management Planning	Required	A GC		
4	2			Credit 1 Building Life-Cycle Impact Reduction	6	C A LD		
1	1			Credit 2 Building Product Disclosure + Optimization - Environmental Product Declarations	2	GC FP		
1	1			Credit 3 Building Product Disclosure + Optimization - Sourcing of Raw Materials	2	GC FP		
1	1			Credit 4 Building Product Disclosure + Optimization - Material Ingredients	2	GC FP		
2				Credit 5 Construction + Demolition Waste Management	2	GC		
Y	7Y	TN	N					
4	3		3	Indoor Environmental Quality	10 Points	Team		
Y				Preq 1 Minimum IAQ Performance	Required	MEP		
Y				Preq 2 Environmental Tobacco Smoke Control	Required	C LD		
1	1			Credit 1 Enhanced Indoor Air Quality Strategies	2	MEP		
2	1			Credit 2 Low Emitting Materials	3	GC A LD		
1				Credit 3 Construction Indoor Air Quality Management Plan	1	GC		
2	1			Credit 4 Daylight	3	LD A		
1				Credit 5 Quality Views	1	A LD		
Y	7Y	TN	N					
6				Innovation	6 Points	Team		
1				Credit 1.1 Innovation: Low Mercury	1	MEP TC		
1				Credit 1.2 Innovation: Green Housekeeping	1	C		
1				Credit 1.3 Innovation: EAc7 - Exemplary Performance	1	TC LD		
1				Credit 1.4 Innovation: TBD	1	TBD		
1				Credit 1.5 Innovation: TBD	1	TBD		
1				Credit 2 LEED Accredited Professional	1	LD		
Y	7Y	TN	N					
3	1			Regional Priority	4 Points	Team		
1				Credit 1 Regional Priority: LTc4 (5 pts min)	1	LD		
1				Credit 2 Regional Priority: LTc5 (5 pts min)	1	LD		
1				Credit 3 Regional Priority: WEc2 (4 pts min)	1	LD		
1				Credit 4 Regional Priority: LTc7 OR SSC4	1	LD		

(A) Architect (Gensler) (GC) General Contractor
(LD) LEED Consultant (CX) Commissioning Agent
(C) Client (LC) Lighting Consultant
(MEP) MEP Engineer (TC) Technology Consultant
(LA) Landscape Architect (FP) Furniture Provider
(CV) Civil Engineer

Exhibit BB

BIM Specifications

Construction Manager shall furnish all BIM modeling in accordance with the software applications reasonably designated by the Owner, in 3D graphic form (the "Model"), including all associated intelligent attribute data (the "Facility Data"). The submitted Model shall be in a native file format with linked performance based specifications, interactive for the user, and shall meet the following minimum requirements and output.

BIM Model Minimum Requirements and Output

- 1.1 General Provisions The deliverable Model shall be developed to include the systems described below as they would be (or, in the case of as-builts, are) built and the processes of installing them, and to reflect final as-built conditions.
- 1.2 Architectural/Interior Design The Architectural systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4"=1'0") scaled drawing.
- 1.3 Space Measurements The Model shall include spaces defining accurate net square footage and net volume, and holding data for the room finish schedule for including room names and numbers.
- 1.4 Walls and Curtain Walls Each wall shall be depicted to the exact height, length, width and ratings (thermal, acoustic, fire) to properly reflect wall types. The Model shall include all walls, both interior and exterior, and the necessary intelligence to produce accurate plans, sections and elevations depicting these design elements
- 1.5 Doors, Windows and Louvers Doors, windows and louvers shall be depicted to represent their actual size, type and location. Doors and windows shall be modeled with the necessary intelligence to produce accurate window and door schedules.
- 1.6 Roof The Model shall include the roof configuration, drainage system, major penetrations, specialties, and the necessary intelligence to produce accurate plans, building sections and generic wall sections where roof design elements are depicted.
- 1.7 Floors The floor slab shall be developed in the structural Model and then referenced by the architectural Model for each floor of the Project.
- 1.8 Ceilings All heights and other dimensions of ceilings, including soffits, ceiling materials, or other special conditions shall be depicted in the Model with the necessary intelligence to produce accurate plans, building sections and generic wall sections where ceiling design elements are depicted.
- 1.9 Vertical Circulation All continuous vertical components (i.e., non-structural shafts, architectural stairs, handrails and guardrails) shall be accurately depicted and shall include the necessary intelligence to produce accurate plans, elevations and sections in which such design elements are referenced.

- 1.10 Architectural Specialties and Woodwork All architectural specialties (i.e., toilet room accessories, toilet partitions, grab bars, lockers, and display cases) and woodwork (i.e., cabinetry and counters) shall be accurately depicted with the necessary intelligence to produce accurate plans, elevations and sections in which such design elements are referenced.
- 1.11 Signage The Model shall include all signage and the necessary intelligence to produce accurate plans and schedules.
- 1.12 Schedules Provide door, window, hardware, sets using BHMA designations, flooring, and wall finish, and signage schedules from the Model, indicating the type, materials and finishes used in the design. Provide furniture and equipment schedules from the model indicating the materials, finishes, mechanical, and electrical requirements.
- 1.13 Furniture/Fixtures/Equipment (FFE) 3D representation of FFE elements is preferred. The FFE systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4"=1'0") scaled drawing.
- 1.14 Fixtures and Equipment Fixtures and equipment shall be depicted to meet layout requirements with the necessary intelligence to produce accurate plans, elevations, sections and schedules depicting their configuration
- 1.15 Structural The structural systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4"=1'0") scaled drawing.
- 1.16 Foundations If applicable, all necessary foundation and/or footing elements, with necessary intelligence to produce accurate plans and elevations.
- 1.17 Floor Slabs Structural floor slabs shall be depicted, including all necessary recesses, curbs, pads, closure pours, and major penetrations accurately depicted.
- 1.18 Structural Steel All steel columns, primary and secondary framing members, and steel bracing for the roof and floor systems (including decks), including all necessary intelligence to produce accurate structural steel framing plans and related building/wall sections.
- 1.19 Cast-in-Place Concrete All walls, columns, and beams, including necessary intelligence to produce accurate plans and building/wall sections depicting cast-in-place concrete elements.
- 1.20 Expansion/Contraction Joints Joints shall be accurately depicted.
- 1.21 Stairs The structural Model shall include all necessary openings and framing members for stair systems, including necessary intelligence to produce accurate plans and building/wall sections depicting stair design elements.
- 1.22 Shafts and Pits The structural Model shall include all necessary shafts, pits, and openings, including necessary intelligence to produce accurate plans and building/wall sections depicting these design elements.
- 1.23 Mechanical The mechanical systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4"=1'0") scaled drawing. Additional minimum Model requirements include:

- 1.23.1 HVAC All necessary heating, ventilating, air-conditioning and specialty equipment, including air distribution ducts for supply, return, and ventilation and exhaust ducts, including control system, registers, diffusers, grills and hydronic baseboards with necessary intelligence to produce accurate plans, elevations, building/wall sections and schedules. All piping larger than 1.5" diameter shall be modeled.
- 1.23.2 Mechanical Piping All necessary piping and fixture layouts, and related equipment, including necessary intelligence to produce accurate plans, elevations, building/wall sections, and schedules. All piping larger than 1.5" diameter shall be modeled.
- 1.24 Plumbing All necessary plumbing piping and fixture layouts, floor and area drains, and related equipment, including necessary intelligence to produce accurate plans, elevations, building/wall sections, riser diagrams, and schedules. All piping larger than 1.5" diameter shall be modeled.
- 1.25 Equipment Clearances All HVAC and Plumbing equipment clearances shall be modeled for use in interference management and maintenance access requirements.
- 1.26 Elevator Equipment The Model shall include the necessary equipment and control system, including necessary intelligence to produce accurate plans, sections and elevations depicting these design elements.
- 1.27 Electrical/Telecommunications The electrical systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4"=1'0") scaled drawing. Additional minimum Model requirements include:
- 1.27.1 Interior Electrical Power and Lighting All necessary interior electrical components (i.e., lighting, receptacles, special and general purpose power receptacles, lighting fixtures, panelboards and control systems), including necessary intelligence to produce accurate plans, details and schedules. Cable tray routing shall be modeled without detail of cable contents. Lighting and power built into furniture/equipment shall be modeled.
- 1.27.2 Special Electrical Systems All necessary special electrical components (i.e., security, Mass Notification, Public Address, nurse call and other special occupancies, and control systems), including necessary intelligence to produce accurate plans, details and schedules.
- 1.27.3 Grounding Systems All necessary grounding components (i.e., lightning protection systems, static grounding systems, communications grounding systems, bonding), including necessary intelligence to produce accurate plans, details and schedules.
- 1.27.4 Communications All existing and new communications service controls and connections, both above ground and underground with necessary intelligence to produce accurate plans, details and schedules. Cable tray routing shall be modeled without detail of cable contents. Communications conduit larger than 1.5" shall be modeled.
- 1.27.5 Exterior Building Lighting All necessary exterior lighting with necessary intelligence to produce accurate plans, elevations and schedules. The exterior building lighting Model shall include all necessary lighting, relevant existing and proposed support utility lines and equipment required with necessary intelligence to produce accurate plans, details and schedules.

- 1.27.6 Equipment Clearances All lighting and communications equipment clearances and no-fly zones shall be modeled for use in interference management and maintenance access requirements.
- 1.28 Fire Protection The fire protection system Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4"=1'0") scaled drawing. Additional minimum Model requirements include:
- 1.28.1 Fire Protection System All relevant fire protection components (i.e., branch piping, sprinkler heads, fittings, drains, pumps, tanks, sensors, control panels) with necessary intelligence to produce accurate plans, elevations, building/wall sections, riser diagrams, and schedules. All fire protection piping shall be modeled.
- 1.28.2 Fire Alarms Fire alarm/mass notification devices and detection system shall be indicated with necessary intelligence to produce accurate plans depicting them.
- 1.29 Civil The civil Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a one inch (1"=100') scaled drawing. Additional minimum Model requirements include:
- 1.29.1 Digital Terrain Model (DTM). Model all relevant site conditions and proposed grading, including necessary intelligence to produce accurate Project site topographical plans and cross sections.
- 1.29.2 Drainage Model all existing and new drainage piping, including upgrades thereto, including necessary intelligence to produce accurate plans and profiles for the Project site.
- 1.29.3 Storm Water and Sanitary Sewers Model all existing and new sewer structures and piping, including upgrades thereto, on the Project site with necessary connections to mains or other distribution points as appropriate, including necessary intelligence to produce accurate plans and profiles for the Project site.
- 1.29.4 Utilities Model all necessary new utilities connections from the Project building(s) to the existing or newly-created utilities, and all existing above ground and underground utility conduits, including necessary intelligence to produce accurate plans and site-sections.
- 1.29.5 Roads and Parking Model all necessary roadways and parking lots or parking structures, including necessary intelligence to produce accurate plans, profiles and cross-sections.

Exhibit CC

Tenant Turnover Requirements

EXHIBIT A-2 [FOOD & BEVERAGE]

CMC @ 110 EAST NINTH STREET

DESCRIPTION OF LANDLORD DELIVERY CONDITIONS

Walls

- A. Landlord will install and deliver demising walls floor to ceiling, with insulation, and fire taped as per code. Basic framing will be provided for Tenant's storefront.

Storefront

- A. Landlord will install and deliver perimeter black steel frame.
- B. Tenant shall build and install its own storefront. Landlord have the right to review and approve the design, fabrication and installation of Tenant's storefront.

Floors

- A. Landlord shall deliver the Premises with an unfinished concrete sub floor.
- B. Tenant is responsible for leveling and installing Tenant's finished floor.

Lighting

- A. Landlord will install emergency egress lighting as required.

Life Safety

- A. Tenant responsible to tie-in to fire alarm system utilizing Landlord's vendor.
- B. Landlord will install and deliver a Fire suppression sprinkler system installed as required for unoccupied space.
- C. Landlord will install and deliver exit signs and egress lighting at all stairwells as required.

Electrical

- A. Landlord will provide 35 watts per SF and terminate at fuse disconnect.
- B. Tenant is responsible for installing and maintaining its electrical meter.
- C. Tenant is responsible for installing and maintaining all transformers and electrical panels as needed.

Gas

- A. Landlord will provide 2" medium pressure gas lines valve outlet.

HVAC

- A. Landlord will provide ventilation of 0.3 cfm / GSF.
- B. Required dampers will be the responsibility of the Tenant.
- C. Landlord will provide 1-ton cooling capacity per 250 SF.

Plumbing

- A. Landlord will furnish a 2" domestic water valve outlet connection.

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Brookfield

Properties

- B. Landlord will provide 4" sanitary line and 3" vent line for tie in by Tenant.
- C. Tenant is responsible for informing Landlord of any penetrations to be coordinated/approved by Structural Engineer.

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EXHIBIT A-3 [OFFICE]

CMC @ 110 EAST NINTH STREET

DESCRIPTION OF LANDLORD DELIVERY CONDITIONS

Walls

- A. Landlord will install and deliver demising walls floor to ceiling, with insulation, and fire taped as per code.

Floors

- A. Landlord shall deliver space with an unfinished concrete sub floor.
- B. Single floor tenants to provide plans for Landlord approval prior to construction start.
- C. Tenant is responsible for leveling and installing Tenant's finished floor.

Lighting

- A. Landlord will install emergency egress lighting as required.

Life Safety

- A. Tenant responsible to tie-in to fire alarm system utilizing Landlord's vendor.
- B. Landlord will install and deliver a Fire suppression system installed as required for unoccupied space.
- C. Landlord will install and deliver exit signs and egress lighting at all stairwells as required.

Electrical

- A. Landlord will provide stub ups with 5 watts per SF and terminate at fuse disconnect.
- B. Tenant is responsible for installing and maintaining its electrical meter.
- C. Tenant is responsible for installing and maintaining all transformers and electrical panels as needed.

Gas

- A. Landlord will provide 2" medium pressure gas lines valve outlet

HVAC

- A. Landlord will provide ventilation of 0.25 cfm to SF of outside air.
- B. Landlord will provide 1-ton capacity per 350 SF.
- C. Required dampers will be the responsibility of the Tenant.

Plumbing

- A. Landlord will furnish a 2" domestic water valve outlet connection.
- B. Landlord will provide 4" sanitary line and 3" vent line for tie in by Tenant.
- C. Tenant is responsible for informing Landlord of any pipe penetrations and to be coordinated and approved by Structural Engineer.

EXHIBIT A-1 [RETAIL]

CMC @ 110 EAST NINTH STREET

DESCRIPTION OF LANDLORD DELIVERY CONDITIONS

Walls

- A. Landlord will install and deliver demising walls floor to ceiling, with insulation, and fire taped as per code. Basic framing will be provided for Tenant's storefront.

Storefront

- A. Landlord will install and deliver perimeter black steel frame.
- B. Tenant shall build and install its own storefront. Landlord have the right to review and approve the design, fabrication and installation of Tenant's storefront.

Floors

- A. Landlord shall deliver the Premises with an unfinished concrete sub floor.
- B. Tenant is responsible for leveling and installing Tenant's finished floor.

Lighting

- A. Landlord will install emergency egress lighting as required.

Life Safety

- A. Tenant responsible to tie-in to fire alarm system utilizing Landlord's vendor.
- B. Landlord will install and deliver a Fire suppression system installed as required for unoccupied space.
- C. Landlord will install and deliver exit signs and egress lighting at all stairwells as required.

Electrical

- A. Landlord will provide stub ups with 7 watts per SF and terminate at fuse disconnect.
- B. Tenant is responsible for installing and maintaining its electrical meter.
- C. Tenant is responsible for installing and maintaining all transformers and electrical panels as needed.

Gas

- A. Landlord will provide 2" medium pressure gas lines valve outlet.

HVAC

- A. Landlord will provide ventilation of 0.3 cfm / GSF.
- B. Required dampers will be the responsibility of the Tenant.
- C. Landlord will provide 1-ton capacity per 300 SF.

Plumbing

- A. Landlord will furnish a 2" domestic water valve outlet connection.

Brookfield

Properties

- B. Landlord will provide 4" sanitary line and 3" vent line for tie in by Tenant.
- C. Tenant is responsible for informing Landlord of any pipe penetrations and to be coordinated and approved by Structural Engineer.

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Exhibit DD

Milestone Events

Milestone Event	Liquidated Damages <i>(Dollars/Day)</i>			Milestone Event Date	Grace Period <i>(Days from Scheduled Milestone Event Date)</i>
	<i>For days 1-14 subject to Grace Period</i>	<i>For days 15-28 subject to Grace Period</i>	<i>For days 29 and thereafter, subject to Grace Period</i>		
Building C Core and Shell Completion	\$5,000	\$10,000	\$15,000	09/30/19	10
Buildings A and B Exterior Façade Completion	\$5,000	\$10,000	\$15,000	09/24/20	10
Sitewide (except pavilion) Vertical Transportation Completion	\$5,000	\$10,000	\$15,000	08/19/20	10
Project Substantial Completion	\$5,000	\$10,000	\$15,000	02/18/21	10

Exhibit EE

Integrity Provisions

1. Fair and Ethical Business Practices Certification

Construction Manager represents and certifies that:

- 1.1. Fair and Ethical Business Practices (which includes following all requirements herein and all other requirements of Applicable Laws) will be strictly adhered to during the life of this Agreement. During the term of this Agreement, neither Construction Manager nor any director, partner, principal, officer or employee shall, in connection with this or any other contract which Construction Manager has with any other party:
- File with a government office or employee, a written instrument which intentionally contains a false statement or false information;
 - Intentionally falsify business records;
 - Give or offer to give, money or any other benefit to a labor official with intent to influence that labor official with respect to any of his or her acts, duties or decisions as a labor official;
 - Give, or offer to give, money or any other benefit to a public servant with intent to influence that public servant with respect to any of his or her acts, duties or decisions as a public servant; or
 - Violate or fail to comply with any provision of the anti-bribery and corruption requirements of this Agreement or the Anti-Bribery and Corruption Acknowledgement and Certificate; or
 - Knowingly participate in the criminal activities of any organized crime group, syndicate or “family”, nor shall any person employed by or associated with any such organized crime “family”, syndicate or group participate through criminal means in any of the business affairs of the Construction Manager.
- 1.2 If it becomes known that any director, partner, officer, employee of Construction Manager, or any shareholder owning 5% or more of Construction Manager’s stock:
- is the subject of investigation involving any violation of criminal law or other federal, state or local law or regulation by any governmental agency; or
 - is arrested, indicted or named as an unindicted co-conspirator in any indictment or other accusatory instruments; or
 - is convicted of any felony under state or federal law and/or any misdemeanor involving a business related crime,

- then the Construction Manager shall immediately notify Owner of any such event.

1.3 Any Construction Manager's Consultant Agreement executed pursuant to this Agreement will include the representations in Sections 1.1 and 1.2 above as part of the Construction Manager's Consultant Agreement.

2. **Non-Collusion Certification**

Construction Manager represents and certifies that:

- 2.1 The prices in Construction Manager's proposal were arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other proposer or with any other competitor;
- 2.2. Unless otherwise required by law, the prices which have been quoted in the proposal have not been knowingly disclosed by Construction Manager, directly or indirectly, to any other proposer or to any competitor; and
- 2.3. No attempt has been made by Construction Manager to induce any other person or entity to submit or not to submit a proposal for the purpose of restricting competition.

3. **Project Integrity Program**

Construction Manager has been advised of the implementation by the Owner of an integrity program for the Project to ensure that all work on the project is performed in accordance with the highest ethical standards. The Construction Manager is wholly committed to supporting the Owner's efforts and those of its integrity consultant, in that regard and agrees to:

- 3.1. require that all firms identified for the award of Construction Manager's Consultant Agreements contracts on the Project execute Consultant Codes of Business Ethics, which shall be made available by Owner on request; and
- 3.2. fully cooperate in and support any and all audits undertaken by the Owner and/or its integrity consultant.

4. **Reporting Hotline**

Owner hereby advises Construction Manager that Owner has established the Brookfield Ethics Hotline so that all employees, vendors, partners and various other stakeholders in Owner may anonymously report any concerns or raise any issues, free of discrimination, retaliation or harassment, pertaining to: (i) accounting, auditing and any other financial reporting irregularities, (ii) unethical business conduct (including, without limitation, safety, environment, conflicts of interest, theft and fraud), or (iii) violations of law. The Brookfield Ethics Hotline may be accessed either: (a) by telephone, by calling toll free from anywhere in North America to (800) 665-0831, or (b) via the internet by submitting an anonymous report online at www.reportlineweb.com/Brookfield. Reports to the Brookfield Ethics Hotline shall be reviewed

by Owner and Owner shall commence appropriate investigations in compliance with law or as Owner otherwise deems necessary.

Exhibit FF

General Conditions Costs Study

Project Name		Calmart		2018 STAFF FORECASTS												2019 STAFF FORECASTS												2020 STAFF FORECASTS												STAFF FORECAST			FTE	HRS	\$/HR	Cost					
Staff Member	Department	Billing Rate	Staff Role	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21											
Adamo, Nino	Management	189	Project Executive		19%	30%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	14	2,518	\$	189	\$	475,005			
Alday, Jose	Management	159	Project Manager		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%						32	5,440	\$	159	\$	866,386		
Sr. Project Engineer	Engineering	135	Sr. Project Engineer							100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						27	4,640	\$	135	\$	626,955		
Fisher, Zach	Engineering	97	Project Engineer				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						31	5,360	\$	97	\$	520,708
Arumugam, Kavitha	Engineering	69	Project Engineer											55%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						21	3,608	\$	69	\$	247,542		
Forster, Breeanne	Engineering	69	Project Engineer																		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						14	2,480	\$	69	\$	171,926			
Brenson, Steve	Superintendence	160	Sr. Project Superintende			25%	25%	25%	25%	25%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						25	4,380	\$	160	\$	702,388		
MEP Superintendent	Superintendence	138	MEP Superintendent								100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						24	4,160	\$	138	\$	573,358		
Vertical Transp Super	Superintendence	130	Vertical Transportation S								100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						24	4,160	\$	130	\$	542,400		
Exterior Superintendent	Superintendence	153	Exterior Superintendent								100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						24	4,160	\$	153	\$	636,727		
Procurement Admin	Purchasing	74	Procurement			50%		50%		50%	50%																															2	320	\$	74	\$	23,601				
Safety Director	Safety	191	Safety								15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%						4	624	\$	191	\$	119,207		
Safety Manager	Safety	119	Safety								100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						24	4,160	\$	119	\$	495,109		
Hernandez, Gabe	BIM/VDC	92	VDC Engineer				50%	100%	100%		100%	100%	100%																														6	880	\$	92	\$	80,792			
GMP Estimator	Estimating	88	Estimator			100%		100%		100%																											25%	25%					4	560	\$	88	\$	49,521			
GMP Estimator	Estimating	87	Estimator			100%		100%		100%																																	3	480	\$	87	\$	41,958			
Nop, Tha	IT Systems Specialist	68	IT Engineer								25%	25%								25%	25%														25%	25%						2	260	\$	68	\$	17,736				
Accountant	Finance - Accounting	68	Onsite Accountant		25%	25%	25%	25%	25%	25%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%						28	4,740	\$	68	\$	323,480		
Cost Engineer	Finance - Accounting	80	Cost Analysis								20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%						5	896	\$	80	\$	71,501			
Scheduler	Scheduling	141	Scheduling		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%						6	1,040	\$	141	\$	147,065			
Intern	Engineering	0	Engineering Support																																																
					38,465	82,241	77,131	118,511	119,369	125,441	235,741	229,841	227,112	218,447	223,400	335,100	223,400	223,400	223,400	226,129	355,831	234,492	234,492	234,492	234,492	351,738	234,492	234,492	234,492	234,492	234,492	234,492	351,738	234,492	234,492	82,383	69,642	15,544						318	54,866				6,733,365		

Substantial Completion Timeline		Non-Staff GC's	\$ 588,200
PGMP TCO	Not covered by GC's		\$ 7,321,565
8/14/2020 Delay Abatement			
11/14/2020			
Delay Pavillion			
Schedule TCO			
2/18/2021			

Project Name Calmart				Rates 172 Hours per Month				Rates including Holiday/Sick (Original Proposal)			
				FTE	HRS	\$/HR	Cost	Work HRS	\$/HR	Cost	
Staff Member	Department	Billing Rate	Staff Role								
Davidson, Peter	Management	195	Project Executive	6.20	1,088	\$ 195	\$ 211,888	967	\$ 219	\$ 211,888	
Adamo, Nino	Management	189	Project Executive	15.50	2,720	\$ 189	\$ 514,025	2,417	\$ 213	\$ 514,025	
Alday, Jose	Management	159	Project Manager	32.50	5,680	\$ 159	\$ 901,913	5,047	\$ 179	\$ 901,913	
Yee, Melissa	Engineering	135	Sr. Project Engineer	26.00	4,480	\$ 135	\$ 606,204	3,981	\$ 152	\$ 606,204	
MEP Engineer - LV 3	Engineering	97	Project Engineer	26.00	4,640	\$ 97	\$ 448,069	4,123	\$ 109	\$ 448,069	
Architectural Engineer - LV	Engineering	69	Project Engineer	15.00	2,640	\$ 69	\$ 182,835	2,346	\$ 78	\$ 182,835	
Pavillion Engineer	Engineering	69	Project Engineer	14.00	2,480	\$ 69	\$ 171,926	2,204	\$ 78	\$ 171,926	
Brenson, Steve	Superintendence	161	Sr. Project Superintende	24.00	4,160	\$ 161	\$ 668,412	3,697	\$ 181	\$ 668,412	
Imber, Matt	Superintendence	138	MEP Superintendent	24.00	4,160	\$ 138	\$ 573,358	3,697	\$ 155	\$ 573,358	
Vertical Transp Super	Superintendence	130	Vertical Transportation S	24.00	4,160	\$ 130	\$ 542,400	3,697	\$ 147	\$ 542,400	
Don Stevens	Superintendence	153	Exterior Superintendent	24.00	4,160	\$ 153	\$ 636,727	3,697	\$ 172	\$ 636,727	
Procurement Admin	Purchasing	74	Procurement	1.00	160	\$ 74	\$ 11,801	142	\$ 83	\$ 11,801	
Safety Director	Safety	191	Safety	3.60	624	\$ 191	\$ 119,207	555	\$ 215	\$ 119,207	
Safety Manager	Safety	119	Safety	24.00	4,160	\$ 119	\$ 495,109	3,697	\$ 134	\$ 495,109	
VDC Engineer	BIM/VDC	92	VDC Engineer	3.00	480	\$ 92	\$ 44,068	427	\$ 103	\$ 44,068	
GMP Estimator	Estimating	90	Estimator	1.50	240	\$ 90	\$ 21,550	213	\$ 101	\$ 21,550	
GMP Estimator	Estimating	87	Estimator	1.00	160	\$ 87	\$ 13,986	142	\$ 98	\$ 13,986	
Nop, Tha	IT Systems Specialist	68	IT Engineer	1.50	260	\$ 68	\$ 17,736	231	\$ 77	\$ 17,736	
Accountant	Finance - Accounting	68	TBD Staff Role	27.75	4,800	\$ 68	\$ 327,262	4,265	\$ 77	\$ 327,262	
Cost Engineer	Finance - Accounting	80	TBD Staff Role	5.20	896	\$ 80	\$ 71,501	796	\$ 90	\$ 71,501	
Scheduler	Scheduling	141	TBD Staff Role	6.20	1,088	\$ 141	\$ 153,387	967	\$ 159	\$ 153,387	
				305.95	53,236		6,733,365	47,307	\$	6,733,365	

NON-STAFF GENERAL CONDITIONS						
Default CSI Description	Additional Description	Quantity	Unit of Measure	Unit Cost	Total Cost	
Job Office/Job Office Cleaning	Assumed office in building, cost for cleaning only	26	Mo.	\$ 400	\$	10,400
Job Office Setup/Removal/Alteration	Initial preparation	1	LS	\$ 25,000	\$	25,000
Vehicles/Parking	Assumed parking for Turner and visitors reserved in structure				\$	-
SUBTOTAL TEMPORARY FACILITIES					\$	35,400
Hoist Facilities					\$	-
Material/Personnel Hoist(s) Rental/Maintenance					\$	-
Hoist Operation					\$	-
Temporary Elevators/Install/Maintenance/Operation					\$	-
Temporary Elevators/Install/Maintenance/Operation					\$	-
Crane Erect/Dismantle/Associate Set-ups/Jumps					\$	-
Hoist Facilities - Expansion #1					\$	-
SUBTOTAL HOIST FACILITIES					\$	-
Temporary Utilities	Assume using existing building power service, temp setup with Electrical trade				\$	-
Temporary Heat/Install/Remove/Maintenance/Usage					\$	-
Temporary Light & Power/Install/Remove/Maintenance/Usage	With Electrical trade				\$	-
Temporary Plumbing & Toilets/Install/Remove/Maintenance/Usage	Assume using building restrooms for office personnel				\$	-
Temporary Water/Install/Remove/Maintenance/Usage					\$	-
SUBTOTAL TEMPORARY UTILITIES					\$	-
Cleaning	General Labor with Direct Work				\$	-
General Building/Glass Cleaning					\$	-
Dirt Chutes/Rubbish Removal/Recycling					\$	-
Site & Street Cleaning					\$	-
Final Cleaning	With Direct Work				\$	-
SUBTOTAL CLEANING					\$	-
Protection & Safety					\$	-
General Protection & Safety	Safety Program and Incentives	26	Mo.	\$ 250	\$	6,500
Barricades/Railings/Perimeter Cable/Toe Boards					\$	-
Safety Program/Watchman/Traffic Control/Drug Testing					\$	-
Protection Finish Work in Place					\$	-
Sidewalk Bridges/Fences	Lane Closure Permit for K Rail, quarterly	9	EA	\$ 5,400	\$	48,600
Fire Watch/Rodent Controls/Extinguishers					\$	-
Protection of Public Utilities					\$	-
First Aid Facility					\$	-
Protection & Safety - Expansion #1					\$	-
SUBTOTAL PROTECTION & SAFETY					\$	55,100
Office Supplies/Equipment/Copier/Printer		26	Mo.	\$ 1,700	\$	44,200
Telephone/Fax/Project Communication	Radios & Repeater System	7	EA	\$ 900	\$	6,300
Telephone/Fax/Project Communication	Cellphones	319	Staff Months	\$ 200	\$	63,800
Telephone/Fax/Project Communication	Data	26	Mo.	\$ 600	\$	15,600
Blueprints					\$	-
Permits & Notices	Permit Expeditor: Recommend McCormick directly under Brookfield				\$	-
Permits & Notices	Permit Signs	1	LS	\$ 5,000	\$	5,000
Permits & Notices	Misc. Permits	9	QTR	\$ 5,000	\$	45,000
Permits & Notices	Building Materials Permit for K Rail	1	LS	\$ 500	\$	500
Permits & Notices	State Water Resources Control Board	1	LS	\$ 500	\$	500
Computer/EDP Expense	Software Licenses (Primavera, Revit)	26	Mo.	\$ 1,000	\$	26,000
Computer/EDP Expense	VDC Setup	1	LS	\$ 20,000	\$	20,000
Computer/EDP Expense	Staff laptops	8	EA	\$ 2,500	\$	20,000
Living/Travel Allowance & Relocation Expenses		26	Mo.	\$ 2,000	\$	52,000
Progress Photo's/Aerial Photography					\$	-
Miscellaneous General Expense		26	Mo.	\$ 5,500	\$	143,000
Miscellaneous General Expense	Drinking Water & Coffee	26	Mo.	\$ 500	\$	13,000
Postage/Express Mail/Messenger Service		26	Mo.	\$ 300	\$	7,800
Legal Expense		1	LS	\$ 5,000	\$	5,000
Staff Training		1	LS	\$ 10,000	\$	10,000
Testing & Inspection/Surveys					\$	-
Ceremonial & Meeting Expenses		1	LS	\$ 10,000	\$	10,000
Records Retention		1	LS	\$ 10,000	\$	10,000
SUBTOTAL GENERAL EXPENSE					\$	497,700
Insurance					\$	-
Post Construction Funding					\$	-
Other Taxes					\$	-
Bonds					\$	-
Indirects on Changes/Additional Directs					\$	-
Fringes/Taxes/Insurance & Bonds - Expansion #1					\$	-
SUBTOTAL TAXES, FRINGES & INSURANCE					\$	-
Consultant					\$	-
Owner/Developer					\$	-
Consultant - 1					\$	-
Consultant - 2					\$	-
Consultant - 3					\$	-
Consultant - 4					\$	-
Consultant - 5					\$	-
Trade Organizations					\$	-
EEO Organization					\$	-
Consultant - Expansion #1					\$	-
SUBTOTAL CONSULTANTS					\$	-
TOTAL NON-STAFF GENERAL CONDITIONS					\$	588,200

Ledger Month	Pay Periods	Ledger Hours	Monthly Hours	End of Month
Jan-18	2	160	184	1/31/2018
Feb-18	2	160	160	2/28/2018
Mar-18	3	240	176	3/31/2018
Apr-18	2	160	168	4/30/2018
May-18	2	160	184	5/31/2018
Jun-18	2	160	168	6/30/2018
Jul-18	2	160	176	7/31/2018
Aug-18	3	240	184	8/31/2018
Sep-18	2	160	160	9/30/2018
Oct-18	2	160	184	10/31/2018
Nov-18	2	160	176	11/30/2018
Dec-18	2	160	168	12/31/2018
Jan-19	2	160	184	1/31/2019
Feb-19	2	160	160	2/28/2019
Mar-19	3	240	168	3/31/2019
Apr-19	2	160	176	4/30/2019
May-19	2	160	184	5/31/2019
Jun-19	2	160	160	6/30/2019
Jul-19	2	160	184	7/31/2019
Aug-19	3	240	176	8/31/2019
Sep-19	2	160	168	9/30/2019
Oct-19	2	160	184	10/31/2019
Nov-19	2	160	168	11/30/2019
Dec-19	2	160	176	12/31/2019
Jan-20	3	240	184	1/31/2020
Feb-20	2	160	160	2/29/2020
Mar-20	2	160	176	3/31/2020
Apr-20	2	160	176	4/30/2020
May-20	2	160	168	5/31/2020
Jun-20	2	160	176	6/30/2020
Jul-20	3	240	184	7/31/2020
Aug-20	2	160	168	8/31/2020
Sep-20	2	160	176	9/30/2020
Oct-20	2	160	176	10/31/2020
Nov-20	2	160	168	11/30/2020
Dec-20	2	160	184	12/31/2020